



Amy G. Rabinowitz
Counsel

March 1, 2004

Mary L. Cottrell, Secretary
Department of Telecommunications and Energy
One South Station
Boston, MA 02110

Re: 2003 Service Quality Report; D.T.E. 04-22

Dear Secretary Cottrell:

I am enclosing for filing Massachusetts Electric Company's 2003 Service Quality Report and Nantucket Electric Company's 2003 Service Quality Report. Thank you very much for your time and attention to this filing.

Very truly yours,

Amy G. Rabinowitz

cc: Jody Stiefel, Hearing Officer (7 copies)
Joseph Rogers, Office of the Attorney General (1 copy)

25 Research Drive
Westborough, MA 01582-0099
Phone 508.389.2975
Fax: 508.389.2463
amy.rabinowitz@us.ngrid.com

Massachusetts Electric Company

2003 Service Quality Report

March 1, 2004

Submitted to:
Massachusetts Department of
Telecommunications and Energy
Docket No. D.T.E. 04-22

Submitted by:

Massachusetts Electric

A **National Grid** Company



FORM B (ELECTRIC COMPANIES)

Massachusetts Electric Company

March 1, 2004

<i>PENALTY PROVISIONS</i>	Years in Database	Mean and Benchmark	Performance in 2003	Comments
Telephone Answering Factor (%)	6	Mean: 74.8% Benchmark: 65.9% - 83.7%	93.2%	
Emergency Answering (%)	1	Mean: Not available Benchmark: Does not apply	95.6%	The company started collecting this data in January 2002. No benchmark is calculated for this measure because no revenue penalty or incentive mechanism has been assigned to it, pursuant to the company's service quality plan.
Service Appointments Kept (%)	1	Mean: Not available Benchmark: Not available	91.8%	The company started collecting this data in January 2002. The mean and benchmark will be calculated once three years of data are available.
Meter Reads	10	Mean: 92.1% Benchmark: 87.9% - 96.3%	98.4%	
Consumer Division Cases	10	Mean: 958 Benchmark: 803 - 1,113	630	
Bill Adjustments (\$/1000 customers)	10	Mean: \$28.31 Benchmark: \$19.90 - \$36.72	\$7.34	
SAIFI	5	Mean: 1.271 Benchmark: 1.066 - 1.304	1.259	
SAIDI	5	Mean: 108.67 Benchmark: 70.59 - 105.52	99.36	
Lost Time Accident Rate (# of acc/200,000 employee hours)	10	Mean: 1.53 Benchmark: 1.08 - 1.98	1.73	

FORM B (ELECTRIC COMPANIES)

Massachusetts Electric Company

March 1, 2004

<i>ADDITIONAL REPORTING</i>	Years in Database	Mean and Benchmark	Performance in 2003	Comments
Staffing Levels	Does not apply	Mean: Does not apply Benchmark: Does not apply		See discussion in Section 3
Restricted Work Day Rate (# of acc/200,000 employee hours worked)	Does not apply	Mean: Does not apply Benchmark: Does not apply	6.88	No mean and benchmark is calculated for this reporting requirement because no revenue penalty or incentive mechanism has been assigned to it, pursuant to the company's service quality plan.
Property Damage > \$50k (#)	Does not apply	Mean: Does not apply Benchmark: Does not apply	0	See discussion in Section 3
Line Loss	Does not apply	Mean: Does not apply Benchmark: Does not apply	4.79	See discussion in Section 3
Capital Expenditures (# of projects and total \$)	10	Mean: Does not apply Benchmark: Does not apply	\$122.3 million	See discussion in Section 3
Spare Component & Inventory Policy	Does not apply	Mean: Does not apply Benchmark: Does not apply		See discussion in Section 3
Customer Surveys (1-7): Random	8	Mean: 92% Benchmark: Does not apply	94%	Represents the percent of customers who gave a rating of 5, 6, or 7 on a 7-point scale. The results for 1995 through 1999 include Mass. Electric and Eastern Edison, weighted by the number of customers in each company.
Customer Surveys (1-7): Callers	6	Mean: 80% Benchmark: Does not apply	79%	Represents the percent of customers who gave a rating of 6 or 7 on a 7-point scale. Eight types of transactions were included in the survey, and the overall results are weighed based on the number of transactions performed at the call center during the year.
Customer Service Guarantees (#, total \$): Lack of Notification of Planned Service Interruptions	1	Mean: Not available Benchmark: Does not apply	1 @ \$25 - \$25	The company started providing customer service guarantees for failure to notify customers of planned service interruptions in 2002.
Customer Service Guarantees (#, total \$): Failure to Keep Service Appointments	1	Mean: Not available Benchmark: Does not apply	251 @ \$25 = \$6,275	The company started providing customer service guarantees for failure to keep service appointments in 2002.

Massachusetts Electric Service Quality Standards Summary Results

Historical Data by Year	SAIFI	SAIDI	LTA	Calls	DTE Cases	Billing Adjs	Appts Met	Meter Reads
1992			1.04		1,099	\$36.75	(1)	97.0%
1993			1.23		1,243	\$32.69		96.5%
1994			1.21		1,016	\$38.93		95.3%
1995			1.37		1,011	\$29.58		95.1%
1996			1.66		899	\$17.54		88.1%
1997	1.125	87.05	1.93	71.6%	997	\$21.50		89.3%
1998	1.131	79.54	1.36	75.1%	793	\$32.85		92.5%
1999	1.384	106.62	1.42	77.8%	843	\$15.10		90.9%
2000	1.172	90.25	1.38	80.7%	818	\$37.30		94.2%
2001	1.175	105.19	2.63	59.0%	1,158	\$23.17		83.4%
2002	1.641	183.36	1.11	84.5%	804	\$34.46	92.2%	95.4%
2003	1.259	99.36	1.73	93.2%	630	\$7.34	91.8%	98.4%

Original Benchmark (Performance through 2001)								
Average	1.197	93.73	1.52	72.8%	988	\$28.54	n/a	92.2%
Std Deviation	0.107	11.79	0.46	8.4%	150	\$8.62		4.3%
Max Incentive	0.983	70.15	0.60	89.6%	688	\$11.30		100.0%
Deadband	1.090	81.94	1.06	81.2%	838	\$19.92		96.5%
Range	1.304	105.52	1.98	64.4%	1,138	\$37.16		87.9%
Max Penalty	1.411	117.31	2.44	56.0%	1,288	\$45.78		83.6%

Actual 2003 Service Quality Standards (Using Performance Thru 2002)								
Average	1.271	108.67	1.53	74.8%	958	\$28.31	n/a	92.1%
Std Deviation	0.205	38.08	0.45	8.9%	155	\$8.41		4.2%
Max Incentive	0.861	32.51	0.63	92.6%	648	\$11.49		100.0%
Deadband	1.066	70.59	1.08	83.7%	803	\$19.90		96.3%
Range	1.304	105.52	1.98	65.9%	1,113	\$36.72		87.9%
Max Penalty	1.411	117.31	2.43	57.0%	1,268	\$45.13		83.7%

2003 Service Quality Results								
	SAIFI	SAIDI	LTA	Calls	DTE Cases	Billing Adjs	Appts Met	Meter Reads
% allocation	22.5%	22.5%	10.0%	12.5%	5.0%	5.0%	12.5%	10.0%
Max Penalty or Incntve	\$3,024,144	\$3,024,144	\$1,344,064	\$1,680,080	\$672,032	\$672,032	\$1,680,080	\$1,344,064
Actual (Penalty) Incntv	\$0	\$0	\$0	\$1,680,080	\$672,032	\$672,032	n/a	\$756,036
						Total net SQ incentive		\$3,780,180

Actual 2004 Service Quality Standards (Using Performance Thru 2003)								
Average	1.270	107.34	1.58	77.4%	897	\$25.78	n/a	92.3%
Std Deviation	0.187	34.94	0.44	10.7%	151	\$10.50		4.4%
Max Incentive	0.896	37.46	0.70	98.8%	595	\$4.78		100.0%
Deadband Range	1.083	72.40	1.14	88.1%	746	\$15.28		96.7%
	1.304	105.52	1.98	66.7%	1,048	\$36.28		87.9%
Max Penalty	1.411	117.31	2.44	56.0%	1,199	\$45.78		83.6%

(1) - "Appointments Met" data collection began in Jan 2002. Three years of data needs to be collected before performance results are monitored against SQ standards.

(2) - In accordance with the approved SQ plan, "the floor benchmarks that trigger penalties do not change". The 2003/2004 penalty range on this worksheet reflects the application of this rule for the affected measures.

Massachusetts Electric Company
Reliability - Outage Frequency (1)

Note: All data includes Massachusetts Electric and Eastern Edison

<u>Calendar Year</u>	(a) Customer Hrs <u>Interrupted</u>	(b) # Customers <u>Interrupted</u>	(c) Avg # of Customers	<u>Frequency</u> formula: (b) / (c)
1997	1,691,756	1,312,066	1,165,998	1.125
1998	1,566,337	1,336,664	1,181,597	1.131
1999	2,100,963	1,636,730	1,182,299	1.384
2000	1,794,489	1,398,019	1,193,043	1.172
2001	2,110,869	1,414,525	1,203,978	1.175
2002	3,714,014	1,994,045	1,215,328	1.641
2003	2,035,301	1,547,305	1,229,099	1.259

	<u>Updated Hist Results</u> 1997 to 2003	<u>Original Benchmark</u> 1997 to 2001	<u>Performance Measures for 2004</u>
Average	1.270	1.197	1.270
STD	0.187	0.107	0.187
Penalty	Max level	1.411	1.411
	25% level	1.304	1.304
deadband range	Average	1.197	1.270
	25% level	1.090	1.083
Incentive	Max level	0.983	0.896

Note: Data source - National Grid USA IDS system. Reliability indices exclude 1) All transmission related outages where the Company does not own or operate the equipment, 2) any interruption at the secondary, transformer or service level, and 3) exclusions allowed under the new major event guidelines (any event that causes 15% of customer served in the operating area to be interrupted during the event).

(1) Frequency per Customer Served Interrupted ÷ Average Customers.

Massachusetts Electric Company
Reliability - Outage Duration (1)

Note: All data includes Massachusetts Electric and Eastern Edison

<u>Calendar Year</u>	(a) Customer Hrs <u>Interrupted</u>	# Customers <u>Interrupted</u>	(b) Avg # of Customers *	<u>Duration (mins)</u> formula: (a)*60 / (b)
1997	1,691,756	1,312,066	1,165,998	87.05
1998	1,566,337	1,336,664	1,181,597	79.54
1999	2,100,963	1,636,730	1,182,299	106.62
2000	1,794,489	1,398,019	1,193,043	90.25
2001	2,110,869	1,414,525	1,203,978	105.19
2002	3,714,014	1,994,045	1,215,328	183.36
2003	2,035,301	1,547,305	1,229,099	99.36

		Updated Hist <u>Data</u> 1997 to 2003	Original <u>Benchmark</u> 1997 to 2001	Performance Measures <u>for 2004</u>
	Average	107.34	93.73	107.34
	STD	34.94	11.79	34.94
Penalty	Max level	177.22	117.31	117.31
	25% level	142.28	105.52	105.52
deadband range	Average	107.34	93.73	107.34
	25% level	72.40	81.94	72.40
Incentive	Max level	37.46	70.15	37.46

Note: Data source - National Grid USA IDS system. Reliability indices exclude 1) All transmission related outages where the Company does not own or operate the equipment, 2) any interruption at the secondary, transformer or service level, and 3) exclusions allowed under the new major event guidelines (any event that causes 15% of customer served in the operating area to be interrupted during the event).

(1) Duration per Customer Served (minutes) = Customer Hours Interrupted*60 ÷ Average Customers.

Massachusetts Electric Company
Lost Work Time Accident Rate

Calendar Year	(a) <u>LTA's</u>	(b) # of MECo <u>Employees</u>	(c) Hours <u>Worked</u>	Frequency formula: (a)*200,000 / (c) <u>LTA rate (1)</u>
1992	26	2,499	5,007,998	1.04
1993	27	2,190	4,389,493	1.23
1994	27	2,232	4,473,318	1.21
1995	28	2,046	4,100,741	1.37
1996	36	2,163	4,332,302	1.66
1997	36	1,992	3,725,839	1.93
1998	26	1,870	3,816,300	1.36
1999	25	1,770	3,519,766	1.42
2000	25	1,831	3,626,288	1.38
2001	49	1,835	3,729,370	2.63
2002	20	1,818	3,603,971	1.11
2003	31	1,595	3,577,211	1.73

		Updated Hist Data <u>1994 to 2003</u>	Original Benchmark <u>1992 to 2001</u>	Performance Measures <u>for 2004</u>
	Average	1.58	1.52	1.58
	STD	0.44	0.46	0.44
Penalty	Max level	2.46	2.44	2.44
	25% level	2.02	1.98	1.98
deadband range	Average	1.58	1.52	1.58
	25% level	1.14	1.06	1.14
Incentive	Max level	0.70	0.60	0.70

historical information includes MECo and Eastern Edison

Note: Lost Time Accident Rate per 200,000 hours worked = Number of Lost Time Accidents x 200,000 ÷ Actual Hours Worked. For 1992 to 1996, actual hours worked are estimated based on 2,004 hours per employee.

Massachusetts Electric Company
Customer Telephone Service - Northboro Call Center

<u>Year</u>	<u>Calls Ans</u>	<u><20 sec</u>	<u>%<20 sec (1)</u>
1997	1,765,250	1,263,692	71.6%
1998	1,638,704	1,231,112	75.1%
1999	1,676,906	1,303,929	77.8%
2000	1,936,117	1,562,748	80.7%
2001	2,230,729	1,316,168	59.0%
2002	1,994,069	1,685,061	84.5%
2003	2,127,978	1,983,466	93.2%

		Updated Hist	Original	Performance
		<u>Data</u>	<u>Benchmark</u>	<u>Measures</u>
		<u>1997-2003</u>	<u>1997-2001</u>	<u>for 2004</u>
Penalty	Average	77.4%	72.8%	77.4%
	STD	10.7%	8.4%	10.7%
	Max level	56.0%	56.0%	56.0%
deadband range	25% level	66.7%	64.4%	66.7%
	Average	77.4%	72.8%	77.4%
	25% level	88.1%	81.2%	88.1%
Incentive	Max level	98.8%	89.6%	98.8%

(1) The Percent of Calls Answered Within 20 Seconds is calculated by dividing the number of calls answered within 20 seconds by the total number of calls answered during the year. "Calls answered" include calls answered by a customer service representative (CSR) and calls completed within the Voice Response Unit (VRU). Abandoned calls are not considered. The time to answer is measured once the customer makes a selection to either speak with a CSR or use the VRU.

1997 was the first full year of operation at the Northboro Customer Service Center

Up until August 2002, National Grid operated two call centers that were used to answer calls from customers of its four distribution companies; one located in Northborough, MA and another in Providence, RI. Prior to 2002, National Grid tracked the telephone service statistics by call center only, not by specific company. The benchmarks for Massachusetts Electric Company and Nantucket Electric Company prior to 2002 were based on data from the Northborough call center, since the majority of both companies' calls from customers were answered at that call center. However, beginning January 1, 2002, National Grid started tracking the telephone statistics by company.

Massachusetts Electric Company
Department of Telecommunications and Energy Cases

<u>Year</u>	<u>Combined Cases (1)</u> (includes Mass. Electric and Eastern Edison)
1992	1,099
1993	1,243
1994	1,016
1995	1,011
1996	899
1997	997
1998	793
1999	843
2000	818
2001	1,158
2002	804
2003	630

		<u>Updated Hist Data</u> <u>1994-2003</u>	<u>Original Benchmark</u> <u>1992-2001</u>	<u>Performance Measures</u> <u>for 2004</u>
Incentive	Average	897	988	897
	STD	151	150	151
	Max level	595	688	595
	25% level	746	838	746
deadband range	Average	897	988	897
	25% level	1,048	1,138	1,048
Penalty	Max level	1,199	1,288	1,199

(1) Source of case data: Mass DTE Consumer Division (Electric Company Complaint Rates)

Massachusetts Electric Company
DTE Billing Adjustments (Between the Company and a Residential Customer)
(includes Mass. Electric and Eastern Edison)

<u>Year</u>	<u>Billing Adjustments per DTE (1)</u>	<u>Avg # of Res Customers per Month (2)</u>	<u>Billing Adj per 1,000 Residen Customers (3)</u>
1992	\$35,801	974,062	\$36.75
1993	\$32,137	983,064	\$32.69
1994	\$38,685	993,757	\$38.93
1995	\$29,710	1,004,527	\$29.58
1996	\$17,770	1,013,288	\$17.54
1997	\$22,075	1,026,598	\$21.50
1998	\$34,112	1,038,282	\$32.85
1999	\$15,854	1,049,800	\$15.10
2000	\$39,496	1,058,766	\$37.30
2001	\$24,333	1,050,167	\$23.17
2002	\$36,489	1,058,801	\$34.46
2003	\$7,850	1,069,872	\$7.34

		<u>Updated Hist Data 1994 to 2003</u>	<u>Original Benchmark 1992 to 2001</u>	<u>Performance Measures for 2004</u>
Penalty	Average	\$25.78	\$28.54	\$25.78
	STD	\$10.50	\$8.62	\$10.50
	Max level	\$46.78	\$45.78	\$45.78
	25% level	\$36.28	\$37.16	\$36.28
deadband range	Average	\$25.78	\$28.54	\$25.78
	25% level	\$15.28	\$19.92	\$15.28
Incentive	Max level	\$4.78	\$11.30	\$4.78

- (1) Source: Mass DTE Consumer Division (Consumer Division Adjustments Worksheet)
(2) Source FERC Form 1 page 301 - residential customers
(3) Billing adjustments per 1,000 Customers = Billing Adjustments ÷ Avg # of Customers x 1,000.

Massachusetts Electric Company
Customer Service - Service Appointments Met as Scheduled

<u>Year</u>	<u>Appointments Scheduled</u>	<u>Appointments Met</u>	<u>% Met</u>
2002	2,289	2,111	92.2%
2003	1,060	973	91.8%

Note: The Company started collecting data on service appointments in January 2002. The mean and benchmark will be calculated once three years of data are available. Service Appointments refer to a mutually agreed upon arrangement for service between the Company and the customer that specifies the date for the Company's personnel to perform a service activity that requires the presence of the customer at the time of service.

Massachusetts Electric Company
On-Cycle Meter Readings

<u>Year</u>	<u>Combined Meters</u>	<u>Estimated</u>	<u>% Read (1)</u>	
1992	11,569,562	345,248	97.0%	MECo only (EEd data not available)
1993	11,643,704	406,038	96.5%	MECo only (EEd data not available)
1994	11,727,009	551,715	95.3%	MECo only (EEd data not available)
1995	14,384,989	711,827	95.1%	MECo and Eastern Ed combined
1996	14,346,387	1,700,521	88.1%	MECo and Eastern Ed combined
1997	14,347,115	1,531,557	89.3%	MECo and Eastern Ed combined
1998	14,575,548	1,098,071	92.5%	MECo and Eastern Ed combined
1999	14,641,058	1,338,426	90.9%	MECo and Eastern Ed combined
2000	14,088,878	821,400	94.2%	MECo and Eastern Ed combined
2001	14,924,493	2,478,482	83.4%	MECo (including Eastern Ed)
2002	15,045,098	697,131	95.4%	MECo (including Eastern Ed)
2003	15,204,593	246,172	98.4%	MECo (including Eastern Ed)

		Updated Hist Data	Original Benchmark	Performance Measures
		<u>1994-2003</u>	<u>1992-2001</u>	<u>for 2004</u>
Penalty	Average	92.3%	92.2%	92.3%
	STD	4.4%	4.3%	4.4%
	Max level	83.5%	83.6%	83.6%
deadband range	25% level	87.9%	87.9%	87.9%
	Average	92.3%	92.2%	92.3%
	25% level	96.7%	96.5%	96.7%
Incentive	Max level	100.0%	100.0%	100.0%

(1) Percent Read = 1 - (Meters Estimated ÷ Total Meters).

Additional Service Quality Reporting Requirements

Staffing Level Benchmark

Section IV of the Company's service quality plan requires the review of whether staffing levels are in accordance with M.G.L. c. 164, § 1E. This statute provides, in pertinent part, that distribution companies, in complying with service quality standards established by the Department, may not make any labor displacements or reductions below staffing levels in existence on November 1, 1997 unless they are part of a collective bargaining agreement or otherwise approved by the Department. Mass. Gen. Laws c. 164, § 1E(b). Mass. Electric's staffing levels have been addressed in its collective bargaining agreements, and thus Mass. Electric has met the requirements of this statute.

Specifically, all but one of the Company's collective bargaining agreements¹ contain the following stipulation:

The Union agrees that for the term of this agreement, all requirements of the Electricity Restructuring Act of 1997, including Section 1E related to staffing levels have been satisfied and that this agreement is a collective bargaining agreement under that language.

The remaining agreement² does not contain this stipulation. It contains more general language about management's right to make decisions about the company. Article III, Managements Rights, provides:

¹The following agreements, all effective 2003 - 2007, contain this language: (1) Local Unions Nos. 326 and 486 of the International Brotherhood of Electrical Workers, (2) Utility Workers Union of America, AFL-CIO, Brotherhood of Utility Workers Council, Locals Nos. 317, 322, 329, and 330 and (3) Utility Workers Union of America, AFL-CIO, Local No. 654.

²The Utility Workers Union of America, AFL-CIO, Local No. 654, effective April 1, 2000 — March 31, 2004.

Additional Service Quality Reporting Requirements

The Brotherhood agrees, for itself and its members, not to hinder or interfere with the management of the Company in its several departments on any matter not otherwise specifically addressed in this agreement, including, but not limited to actions related to the following matters: selection of the workforce, including the criteria on which those decisions are based; assignment of the work; direction of the work force; scheduling; *staffing levels*; discipline or discharges for proper cause; and the right to transfer employees to work for which they are better suited and *to furlough employees for any reason, including lack of work or efficiency in operations.* (Emphasis supplied)

In all cases, the appropriateness of Mass. Electric's staffing levels have been addressed in the collective bargaining agreements, and thus, Mass. Electric is in compliance with M.G.L. c. 164, §1E. No further review of Mass. Electric's staffing levels is required.

Property Damage

Pursuant to Section VIII.A of the Company's Service Quality Plan, the Company reports to the Department on property damage to Company-owned property in excess of \$50,000. In 2003, there were no occurrences that produced damage to company property in excess of \$50,000.

Line Losses

Pursuant to Section VIII. A. of the Company's Service Quality Plan, the Company is providing substantiation of (1) its Electric Distribution Line Loss value, (2) the accompanying adjustments that were made to standardize the value to specific reference conditions, and (3) the specific reference conditions in Attachment B.

Additional Service Quality Reporting Requirements

Capital Expenditure Information

Pursuant to Section VIII.E of the Company's Service Quality Plan, the Company is providing:

1. Attachment C: A summary worksheet showing Mass. Electric approved and completed transmission and distribution capital expenditures by year (1993-2003).
2. Attachment D: A detailed report for 2003³ showing expenditures by project, including a description of each project.

Spare Component and Inventory Policy

Pursuant to Section VIII. F of the Company's Service Quality Plan, the Company provides the following description of its spare component and inventory policy.

The Company's inventory is managed in conjunction with the inventory of the other National Grid distribution companies ("Companies"). There is a centralized distribution center (CDC) in Franklin, Massachusetts and twelve regional warehouses in New England. In New York, there is a CDC, and two hub warehouse locations. These CDCs and warehouses receive, store, and distribute materials and supplies to meet day-to-day requirements for new construction, rebuilds, repairs, and service restoration due to severe weather conditions. The Companies manage \$57 million in inventory and distribute approximately \$120 million in materials throughout the National Grid service territories. At this time, Mass. Electric and the

³ Detailed information on capital expenditures for 1993-2001 has been provided to the Department in Docket D.T.E. 01-71B, on March 1, 2002 and in Docket D.T.E. 03-20 on March 3, 2003.

Additional Service Quality Reporting Requirements

other New England distribution companies routinely share inventoried materials with each other.

Sharing with the New York distribution company occurs during emergencies only, however.

As a result of the 2002 merger between National Grid USA and the Niagara Mohawk Power Corporation, National Grid has developed a centralized corporate structure to combine the Supply Chain Management functions that separately existed in New York and New England. This includes procurement, materials planning, computer support systems, a common set of operational practices, and a system wide investment recovery practice. Through the system wide investment recovery practice, National Grid will reduce its inventory by standardizing items, decreasing lead-times associated with aggressive negotiations with vendors, and eventually sharing inventories. These inventory reductions will not affect the ability to provide reliable service to customers, however. Emergency material distribution will be enhanced, system-wide, by combining the best practices from New York and New England. National Grid has established important safeguards to balance the risk of running out of critical items in the course of this methodical inventory reduction. It will monitor the accuracy of the inventory, provide flexible delivery services, and develop cross-functional solutions for material supply consistent with customer service requirements. These actions will result in a cost effective, coordinated inventory management system.

National Grid works to obtain the maximum salvage value for idle assets classified as surplus or obsolete inventories, scrap, and retired capital equipment. These assets and waste management activities will continue to include the security, control, and environmental

Additional Service Quality Reporting Requirements

accountability during the disposal of these idle assets and commodity items. The current New York investment recovery programs will continue, while focusing on the use of the Wire Granulation Service, a wire material recovery process, and implementing a new Transformer Disposal Process will increase the Investment Recovery effort in New England.

Customer Surveys

Pursuant to Section III.C of the Company's Service Quality Plan, the Company is providing:

1. Attachment E, page 1: Results of a customer satisfaction survey of a statistically representative sample of residential customers.
2. Attachment E, page 2: Results of a survey of customers randomly selected from those customers who have contacted the Company's customer service department within 2003.

Annual Major Outage Events

In response to the reporting requirements set forth in Section VIII.D of the Company's Service Quality Plan, the Company reports that it had one Excludable Major Event in 2003 on October 15 - 16, the details of which are discussed below.

On October 15 - 16, a severe wind storm impacted much of Massachusetts and left 15.4% (188,880) of Mass. Electric customers without power. Within the Company's service territory, the Merrimack Valley area was the most severely impacted, as can be seen in the hour by hour charts shown in Figure 1 and Figure 2 below.

Additional Service Quality Reporting Requirements

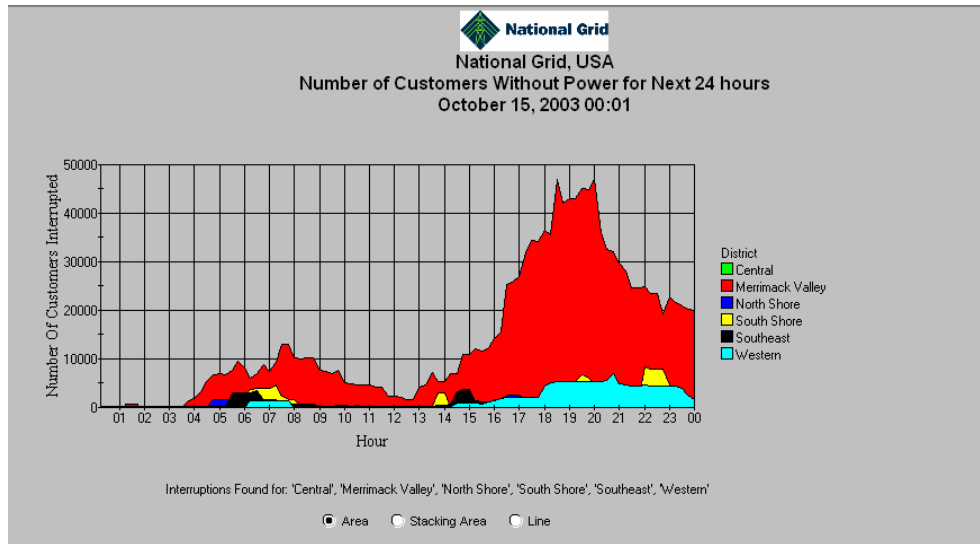


Figure 1. Mass. Electric Customers Impacted by Hour - October 15, 2003

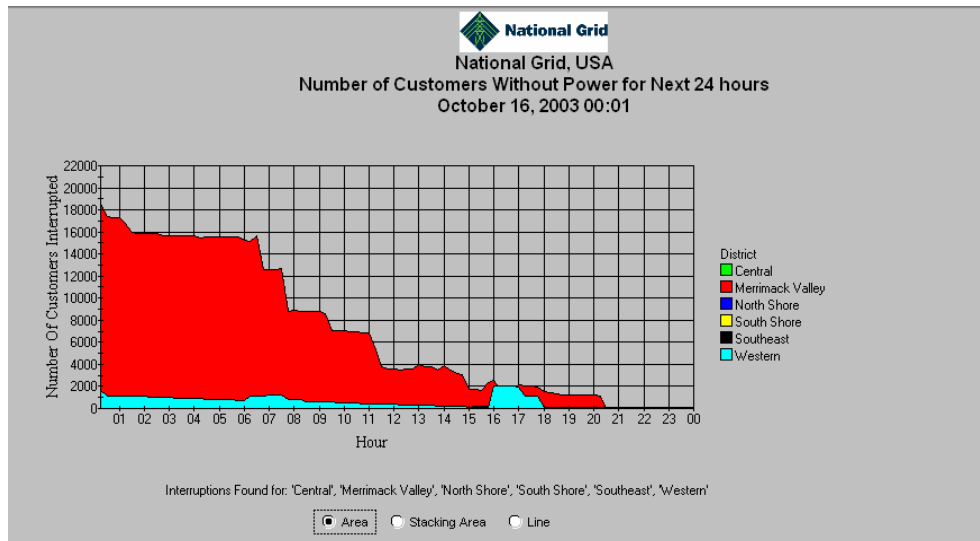


Figure 2. Mass. Electric Customers Impacted by Hour - October 16, 2003

Additional Service Quality Reporting Requirements

Figure 1 and Figure 2 also show the impact to customers on an hourly basis. In summary, the storm started at 3:30 am on October 15. Between 6:00 am and 8:00 am, approximately 15,000 customers were interrupted. A second wave began around 1:00 pm and peaked between 6:00 pm and 9:00 pm, with approximately 65,000 customers out of service. Between midnight and 1:00 am on October 16, there were approximately 22,000 customers out of service. Customers were out of service until October 16 around 8:00 pm.

The customers who experienced the longest interruption in service were in the Western District. There were 4 customers that were out of service for 30 hours and 46 minutes.

The total number of crews used to restore service during this time period was 587. The table below summarizes the division in which the crews were assigned and the shifts during which they worked.

Division	Oct. 15 7 am- 11pm	Oct. 15-Oct. 16 11 pm- 7am	Oct. 16 7am- 11pm	Oct. 16-Oct. 17 11 pm- 7am	Oct. 17 7am – 11pm	Various
Bay State North	91	32	148	32	148	0
Bay State South	62	3	54	0	8	14 ⁽¹⁾
Bay State West	91	21	103	26	71	0
Total	244	56	305	58	227	14

(1) Bay State South also had an additional 14 trouble shooter crews working predominantly during the afternoon and evening hours.

Poor Performing Circuits

Pursuant to Section VIII.G of the Company's Service Quality Plan, the Company has identified the poor performing circuits set forth in Attachment F.

Additional Service Quality Reporting Requirements

Tree Trimming

In response to the reporting requirements set forth in Section VIII.D of the Company's Service Quality Plan, the Company's policy on tree trimming is presented in Attachment G.

Substantiation of Electric Distribution Line Loss Value – Calendar Year 2003

Distribution line losses are calculated as the difference between System Delivered MWh and the sum of Company Use and Cycles Sales. This is expressed as a percent of System Delivered MWh and adjusted for the number of billing days versus the number of calendar days. For 2003, the value is 4.79%, as shown on page 2.

System Delivered MWh are measured and collected daily at bulk tie-line and substation metering points. These MWh measure total energy delivered to the Massachusetts Electric Company (MECo) retail service area. System Delivered MWh include the energy consumption of all retail customers, Company Use and distribution line losses as well as theft and other unaccounted for energy. Daily System Delivered MWh are easily summed to calendar months and the year.

Company Use consists of metered MWh that are tracked but not billed. This includes the energy use of MECo facilities. Company Use accounts for less than 0.2% of System Delivered MWh. Cycle Sales refer to MWh measured at customer metering points and collected over the 21 billing cycles of a month. The billing cycles refer to the days on which customer meters are read. This is determined by the meter reading schedule. It is necessary to read customer meters and issue bills on a cycle basis over the course of an entire month because of the sheer number of retail customers.

The 21 billing cycles roughly coincide with the non-holiday weekdays of a month. For example, MWh collected in Cycle 1 consist of customer meter reads from the first non-holiday weekday of the monthly billing period. This day is always close to or at the first day of the calendar month. Cycle 1 MWh measure what customers in that billing cycle consumed since Cycle 1 of the previous month. This consists mainly of energy usage from the previous month. In general, MWh collected from the earlier billing cycles (1-10) reflect more energy usage from the previous month than the current month. MWh collected from the later billing cycles (11-21) reflect more usage from the current month than the previous month. Total Cycle Sales are the sum of all MWh collected in Cycle 1 through Cycle 21 of the month. Cycle Sales thus measure energy consumption billed over the calendar month but consumed during both the current and previous month.

To mitigate the timing difference between Cycle MWh Sales and System Delivered MWh, the Electric Distribution Line Loss value is adjusted for the number of days that customers are billed for in a year versus the number of calendar days that System Delivered MWh are collected for. For example, in 2003 there were 365 calendar days (non-leap year) for which System Delivered MWh were collected. However, per the meter reading schedule, customers were billed for 365.57 days in 2003, or 0.16% more than the number of calendar days. As a result, Cycle MWh Sales were approximately 0.16% higher than if customers had been billed for only 365 days; and the Electric Distribution Line Loss value was 0.16% lower. Accordingly, 0.16% was added to the Electric Distribution Line Loss value to adjust for the number of days billed in 2003.

The difference between System Delivered MWh and the sum of Cycle Sales and Company Use still includes other timing differences in consumption, such as differences in consumption due to weather and day type. This is reflected by the negative values shown in January, February and September, as well as the larger values in June and August. However, these differences offset each other in large part over the course of a full year.

Massachusetts Electric Company
Calculation of 2003 Electric Distribution Line Loss Value

<u>Month</u>	<u>System Delivered Energy (Calendar MWh) (a)</u>	<u>Cycle Sales Plus Company Use (Billed MWh) (b)</u>	<u>Percent Losses & Unbilled (c)=[(a)-(b)]÷(a)</u>	<u>Number of Calendar Days (d)</u>	<u>Number of Billed Days (e)</u>	<u>Percent Difference (f)=[(d)-(e)]÷(d)</u>	<u>Adjusted Percent Losses & Unbilled (g)=(c)-(f)</u>
Jan-03	2,121,495	2,074,452	2.22%	31	33.38	-7.68%	9.89%
Feb-03	1,872,804	1,937,442	-3.45%	28	29.67	-5.96%	2.51%
Mar-03	1,905,021	1,783,714	6.37%	31	29.14	6.00%	0.37%
Apr-03	1,739,527	1,697,289	2.43%	30	29.48	1.73%	0.69%
May-03	1,688,050	1,574,366	6.73%	31	29.48	4.90%	1.83%
Jun-03	1,811,323	1,619,848	10.57%	30	30.67	-2.23%	12.80%
Jul-03	2,131,098	1,892,350	11.20%	31	30.52	1.55%	9.65%
Aug-03	2,191,328	1,983,340	9.49%	31	29.71	4.16%	5.33%
Sep-03	1,782,275	1,910,249	-7.18%	30	30.52	-1.73%	-5.45%
Oct-03	1,764,400	1,655,692	6.16%	31	29.62	4.45%	1.71%
Nov-03	1,761,585	1,660,494	5.74%	30	30.14	-0.47%	6.21%
Dec-03	2,016,820	1,941,669	3.73%	31	33.24	-7.23%	10.95%
2003	22,785,726	21,730,905	4.63%	365	365.57	-0.16%	4.79%

Massachusetts Electric Company
Summary of Capital Expenditures
Years 1993 - 2003

<u>Year</u>	<u>Mass. Electric</u>	<u>Eastern Edison</u>	<u>Total Mass. Electric</u>
1993	\$72,695,266	\$10,097,153	\$82,792,419
1994	\$87,233,042	\$10,339,501	\$97,572,543
1995	\$84,335,030	\$8,161,292	\$92,496,322
1996	\$89,565,316	\$8,236,321	\$97,801,637
1997	\$86,460,876	\$10,550,451	\$97,011,327
1998	\$80,983,531	\$9,474,749	\$90,458,280
1999	\$73,376,843	\$9,605,060	\$82,981,903
2000	\$84,176,106		\$84,176,106
2001	\$107,418,554		\$107,418,554
2002	\$127,300,991		\$127,300,991
2003	\$122,325,645		\$122,325,645

1. Cape Ann Supply Capacity and Reliability

Replacement Phase 1 and 51T2 Extension, Gloucester (NS), 2003, \$8.6M

Replace the 23 kV supply cable (2363) and extend the 34 kV supply from West Gloucester Substation to the Gloucester Substation to increase load serving capacity to Gloucester area and improve reliability.

Construction in progress. Temporary crossings were installed summer 2003. MECo is presently drilling under the Annisquam to install permanent facilities. Once installed, the temporary crossing will be removed. Permanent completion date now estimated for 04/04.

Total expenditures to date: \$ 8.0M.

2363 Replacement Phase 2, Beverly, Manchester and Gloucester (NS), 2005, \$11.2M

Replace 23 kV supply cable (2363) from the East Beverly Substation to the West Gloucester Substation to improve reliability.

Original Phases II through IV (budgeted through FY'06) have been combined.

Construction will probably be completed prior to FY'06.

Total expenditures to date: \$7.6M

51T3 Installation, 2004 & 2006, \$3.1M

Install underground cable for 3rd East Beverly 34.5kV feeder (51T3) between East Beverly Substation and West Gloucester Substation to improve reliability and increase load serving capability of 51T2.

Cable installation expected to be complete in July, 2004. Substation construction expected in 2006.

2. Route 146 Relocation Project, Millbury/Worcester (C), 2001-2006, \$3.8M

Multiple (6) overhead and underground distribution relocation projects due to the expansion of Route 146 in the Millbury/Worcester area.

Total 2003 expenditure: \$300K.

This project is continuing, on Mass Highway Department's schedule.

3. New Beverly #12 Substation, (NS), 2003, \$2.8M

Build substation with one 115/13 kV transformer and two feeders to increase load serving capacity and improve reliability. Re-conductor the M191 115kV line.

Beverly Sub estimated costs: MECo-\$2,400K. Construction of sub and feeders in progress, to be completed by 06/03.; reconductoring in fall of 2003 or spring of 2004

Construction complete in 2003. Total MECo expenditures to date: \$2.8M.

- 4. Upgrade Billerica 70 Substation, Billerica, E. Chelmsford, Billerica (MV), 2003, \$2.8M**
Construction started in 2002.
By summer 2003: Install one 115/13 kV transformer and three distribution feeders to increase load serving capacity and improve reliability.
By end of 2003: Install second 115/13 kV transformers and remaining four 13 kV distribution feeders.
Four of the seven new feeders will replace existing feeders and three new feeders will ultimately be added to support the area.
Total MECo expenditures to date: \$2.7M
- 5. Expand Newburyport Substation, Newburyport (MV), 2002, \$ 2.7M**
Install a new 23/13 kV transformer and modular feeder position with a 13 kV distribution feeder to increase load serving capacity.
Feeder in service in 2002. Additional work to be done.
Total expenditures to date: \$ 2.5M.
- 6. New Westford 57 Substation, Westford, Andover, E. Tewksbury (MV), 2003, \$2.6M**
Build new substation with one 115/13 kV transformer and three 13 kV distribution feeders to increase load serving capacity.
Substation construction completed in 2003.
Total MECo expenditures to date: \$2.6M.
- 7. Upgrade North Weymouth Substation, Weymouth (SS), 2004, \$2.5M**
Rebuild 23kV bus structure.
Expand 13.8kV bus structure for new 6W2 feeder.
Rebuild existing 13.8kV bus structure for 6W1 feeder.
Install two 23/13 kV transformers.
Install new control house.
Total 2003 expenditure:\$2.1M
- 8. Upgrade South Randolph Substation, Randolph (SS), 2004, \$2.4M**
Install new 115/13.8kV transformer.
Expand 13.8kV bus structure for two new feeder positions.
Install circuit breakers and regulators for new 97W3 feeder.
Replace insulated bus supports.
Install new station capacitor bank.
Total 2003 expenditure: \$30K

- 9. New Woodchuck Hill Substation, North Andover (MV), 2003, \$2.3M**
By summer 2003: Build a new substation with one 115/13 kV transformer and three 13 kV distribution feeders to increase load serving capacity.
Substation construction completed in 2003.
Total MECo expenditures to date: \$2.2M.
- 10. Medford Area Relaying Upgrades, Medford/Everett/Malden, (MV), \$1.8M**
Replace pilot wire relays and overcurrent relays with Schweitzer relays at 8 substations.
Total spending to date: \$1.5M
Expected completion June 2004
- 11. Install 23kV Supply Line to Newburyport Sub, Newburyport, (MV), \$1.4M**
Install MH and duct system and 23kV cable for approximately one mile
Civil construction 75% complete; cable 0%.
Total spending to date: \$1.0M.
Expected completion 2004.
- 12. Expand Read St. Substation, Attleboro (SE), \$.95 M**
Install new 9L5 Feeder in 2004.
Extend bus structure for a new feeder and provisions for a 6th feeder.
Install recloser and regulators for the 9L5 feeder.
Total 2003 expenditure: \$.92M
- 13. Rebuild Rena Street Substation, Worcester (C), 2004, \$1M**
Replace outdoor substation with metal-clad substation to increase station supply capacity and improve reliability.
Total 2003 expenditure: \$570K.
Expected completion in February of 2004.
- 14. Improve City of Worcester Underground 4 kV, Worcester (C), annual cost \$1M**
Annual expenditure to improve the Worcester 4 kV underground reliability.
Improvements include cable replacement, switchgear installation and OFC removals.
Ongoing project. Continues to be budgeted for \$1M annually.
- 15. Expand West Salem Substation, Salem and Lynn (NS), 2002, \$1.1M**
Add one 13 kV distribution feeder to increase load serving capacity.
Feeder 29W5 substation construction complete. Distribution mainline work completed and minor side tap construction nearly completed.
Total expenditures to date \$1,084.

16. Improvements at Chartley Pond Substation, Attleboro (SE), 2004, \$.9M

Automate substation switches in 2004.

Replace existing substation switches with motor operated switches with remote control and indication capability.

Total 2003 expenditure: \$.44M

17. Improve Shrewsbury Substation, Shrewsbury (C), 2004 \$0.9M

Replace the control house and install new relays and controls with a remote terminal unit connected to the system control center.

Replace three circuit breakers

Total 2003 expenditure: \$550K.

Expected completion in 2004.

18. Upgrade Faraday Street, Worcester (C), 2004, \$0.7M

Replace thirteen 4.16 kV breakers to replace outdated equipment at this indoor substation.

Total 2003 expenditures: \$570K.

Expected completion in 2004.

19. Expand Rocky Hill Substation, Milford (SE), 2003, \$.5M

Extend bus structure for a new feeder and provisions for a 4th feeder.

Install circuit breaker and regulators for the 336W3 feeder.

Total 2003 expenditure: \$.5M

Massachusetts Electric Company
Customer Surveys - Random

<u>Year</u>	<u>Survey Results</u>		Updated Hist Data <u>1995-2003</u>	Original Benchmark <u>1995-2001</u>
1995	91%			
1996	90%			
1997	92%			
1998	92%			
1999	91%			
2000	95%			
2001	90%			
2002	94%			
2003	94%			
Average			92%	92%
STD			2%	2%

Represents the percent of customers who gave a rating of 5, 6, or 7 on a 7-point scale.
The results for 1995 through 1999 include Mass. Electric and Eastern Edison, weighted
by the number of customers in each company.

Massachusetts Electric Company
Customer Surveys - Callers

<u>Year</u>	<u>Survey Results</u>		Updated Hist <u>Data</u> <u>1997-2003</u>	Original <u>Benchmark</u> <u>1997-2001</u>
1997	74%			
1998	79%			
1999	82%			
2000	85%			
2001	78%			
2002	79%			
2003	79%			
Average			79%	80%
STD			3%	4%

Represents the percent of customers who gave a rating of 6 or 7 on a 7-point scale.
Eight types of transactions were included in the survey, and the overall results are weighed
based on the number of transactions performed at the call center during the year.

Massachusetts Electric Company
2003 Poor Performance Circuits

FEEDER	DISTRICT	SAIFI	SAIDI	Reason	Corrective Actions
304W1	Central	3.67	213.76	Worst 10% SAIFI for two years	Trees accounted for 50% of SAIFI in 2003. The recloser on P1 Carroll Rd. locked out 3 times this year due to trees. Carroll Rd. will be reconducted with spacer cable in 2004. One sleeve failure accounted for 30% of SAIFI in 2003, it has been replaced.
328J2	Central	16.27	1244.73	Worst 10% SAIFI and SAIDI for two years & Exceeds 300% SAIDI for two years	Voltage conversion of this feeder is in progress. Most of the feeder was converted in 08/03. Currently only 32 customers are still served by this feeder.
415L1	Central	3.48	175.37	Worst 10% SAIFI for two years	Three major incidents accounted for 62% of SAIFI in 2003. The first was a motor vehicle accident. The second was caused by a rain leaking into a breaker and damaging a relay. The breaker has been repaired and the relay replaced. The third incident occurred when a line recloser locked out due to imbalance. The load has been balanced. 415L1 will be re-configured for improved reliability in 2004.
609W1	Central	5.13	463.53	Worst 10% SAIFI and SAIDI for two years & Exceeds 300% SAIDI for two years	Trees caused 34% of SAIFI and 42% of SAIDI in 2003. Cutouts caused 21% of SAIFI and 20% of SAIDI in 2003. The entire feeder will be trimmed in 2004. In addition, New Westminster Rd., Hubbardston will be re-conductor in 2004 and cutouts will be replaced in this area.
6J318	Central	2.03	267.49	Worst 10% SAIDI for two years	Significant portions of the UG cable on this feeder were replaced in 2003 for reliability reasons. This work required a number of scheduled interruptions. This work is completed and no further work is planned.
7J386	Central	4.34	301.43	Worst 10% SAIDI for two years	HT42, the source to Stearns St. Sub which supplies 7J386 and 7J387, locked out 4 times this year. 2 lock outs were caused by a fault in the aerial cable along Stafford St. Eight sections have been replaced with spacer cable.
7J387	Central	5.92	470.08	Worst 10% SAIDI for two years & Exceeds 300% SAIDI for two years	See 7J386 above.
14L1	Merrimack Valley	1.86	226.86	Worst 10% SAIDI for two years	There were 8 events during a single lightning storm on 8/13/03. Load will be transferred to the new 70L8 feeder out of Billerica #70 before the summer of 2004 thus decreasing the number of customers affected by any one feeder outage. This feeder is also being reviewed as part of a Tewksbury Area Study.
211L2	Merrimack Valley	3.43	168.85	Worst 10% SAIFI for two years	An auto-transfer scheme will be installed on this feeder in 2004. The 211L2 feeder is also being reviewed as part of a Lowell area study.
50L3	Merrimack Valley	5.92	397.84	Worst 10% SAIFI and SAIDI for two years & Exceeds 300% SAIDI for two years	A phase imbalance problem on this feeder was corrected in June 2003. Upon completion of the new Burrtr Road 54L4 feeder (6/1/04), 50L3 will be re-arranged for improved reliability.
59L3	Merrimack Valley	5.22	310.73	Worst 10% SAIFI and SAIDI for two years & Exceeds 300% SAIFI for two years	Replaced suspect pole mounted recloser and substation recloser controls in February 2004. New substation breakers, relays, and underground getaway cables are scheduled for completion by March 2005.
59L6	Merrimack Valley	4.62	242.62	Worst 10% SAIDI for two years	Feeder re-arrangement scheduled upon completion of new Burrtr Road 54L4 feeder by June 1, 2004. New substation breakers, relays, and underground getaway cables scheduled for completion by March 2005.

Massachusetts Electric Company 2003 Poor Performance Circuits

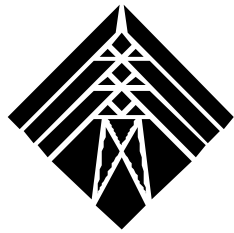
FEEDER	DISTRICT	SAIFI	SAIDI	Reason	Corrective Actions
6J5	Merrimack Valley	1.92	262.79	Worst 10% SAIDI 2003 and worst 10% SAIFI 2002	One 3 hour and 39 minute feeder outage contributed over 80% of SAIDI. This long outage duration was due to two large, but separate main line underground sections. To improve troubleshooting and reduce outage duration, fault indicators will be installed on this feeder.
76L1	Merrimack Valley	3.28	194.76	Worst 10% SAIFI for two years	The 76L1 is being addressed as part of a Haverhill Area Study. Additional feeder capacity in the area and an auto transfer scheme for the 23kV supply to the Whittier substation will be installed.
8J1	Merrimack Valley	4.48	477.33	Worst 10% SAIFI and SAIDI for two years & Exceeds 300% SAIFI for two years	This feeder has had numerous outages due to station problems over the past 2 years. There are plans to retire this substation and convert the load to 13 kV within the next few years. The majority of the load will be transferred to a new 13 kV feeder out of the East Dracut #75 substation. This feeder is scheduled to be completed during the summer of 2005.
22W1	North Shore	3.99	353.2	Worst 10% SAIDI for two years	In the past two years there have been five interruptions of this feeder. Three were due to incidents on the supply from Swampscott #22. The three supply interruptions were due to the mis-operation of equipment. The equipment involved has been repaired. Of the two feeder incidents, one was a tree contact during a snowstorm and the other was a failed cutout (which was replaced). In addition, feeder's getaway cable and voltage regulator will be replaced as part of a load relief project.
23H3	North Shore	1.45	300.96	Worst 10% SAIDI for two years & Exceeds 300% SAIDI for two years	A cable failure on 12/20/2002 caused a 17.5 hour outage to the majority of customers served. An animal contact at the Gloucester #24 substation on 10/20/2003 caused the loss of both Manchester #23 23kV supply lines from the East Beverly substation. This spring the 23kV structure at Gloucester #24 will have additional animal protection installed. The third event was another cable failure. A study is underway to evaluate asset replacement requirements, cable and splice failures, and the long term disposition of the Manchester #23 substation and the 2.4kV delta distribution system. Results are expected this summer.
28J2	North Shore	1.47	233.21	Worst 10% SAIDI for two years	Three events accounted for 87% of the reliability minutes lost due to outages on this feeder. Two of the events were due to failed insulators at the West Gloucester #28 substation. A thermovision scan of the substation structure was completed in May 2003. Results indicated that no new 4kV hot-spots were present. The third outage occurred when the substation's alternate source, the 2363, did not restore the station after loss of the 35kV primary supply. The 2363 was in an emergency configuration, which prevented station transfer, due to an outage on another 23kV line. The 2363 replacement cable and a new 35kV underground supply cable are scheduled for installation. Completion is expected in July 2004. A study is underway to evaluate the long term disposition of the 4kV substation and distribution at West Gloucester. Results are expected in April 2004.
29W1	North Shore	4.03	188.56	Worst 10% SAIFI for two years	In the past two years there have been 14 interruptions of this feeder. Five have been due to failures on the supply to West Salem substation. Two mainline outages were related to an overload in the summer of 2002. This feeder has been re-conducted to relieve overloading. Three additional interruptions occurred during the re-conducting work when phases were mistakenly dropped to the ground. This work was complete in summer 2002. The remaining four mainline faults exhibit no common mode of failure.
40J4	North Shore	2	730.16	Worst 10% SAIDI for two years & Exceeds 300% SAIDI for two years	A failure on the overhead 23kV supply line to the Rockport #40 substation caused a fault on the substation's alternate 23kV supply line, 2363. The 2363 cable replacement will be complete in July 2004. An animal contact at the Gloucester #24 substation on 10/20/2003 caused the loss of all three 23kV supply lines to Cape Ann from the East Beverly substation. Additional animal protection will be installed on the 23kV structure this spring. The third outage was caused by a large tree falling on primary wires during the December 6th and 7th blizzard in 2003. A feeder patrol was performed to locate any remaining storm damage on 2/20/2004. No additional problems were identified.
51T2	North Shore	2.77	336.76	Worst 10% SAIFI for two years	Storm and wind related events accounted for nearly 66% of the reliability minutes lost on this feeder in 2002 and 2003. The Christmas Day storm of 2002 and the December 6th and 7th storm of 2003 accounted for 33% of the total. Several areas that are subjected to high winds have been targeted for storm resistance, especially along coastal sections in Essex and Gloucester. Improvements include replacing cross-arms and insulators. The 51T3 cable installation will have a positive impact on reliability and is scheduled for completion in July 2004.

Massachusetts Electric Company 2003 Poor Performance Circuits

FEEDER	DISTRICT	SAIFI	SAIDI	Reason	Corrective Actions
52J2	North Shore	2.37	454.04	Worst 10% SAIDI for two years & Exceeds 300% SAIDI for two years	A failure on the alternate 23kV supply line to the Riverdale #52 substation caused a fault on the substation's primary 23kV supply line. This primary supply line, the 2363, will be completely replaced in July 2004. An animal contact at the Gloucester #24 substation on 10/20/2003 caused the loss of all three 23kV supply lines to Cape Ann from the East Beverly substation. Additional animal protection will be installed on the 23kV structure this spring. The third outage was caused by a large tree falling on primary wires during the December 6th and 7th blizzard in 2003. A feeder patrol will be performed to locate any remaining storm damage.
9C5	North Shore	2.31	310.61	Worst 10% SAIDI for two years & Exceeds 300% SAIDI for two years	Five of six feeder lockouts in 2002 were due to extended cable failures in the Medford area. Corrective action has already been taken and is detailed in a previous report to the Department. The 6th feeder lockout was caused by an operating error. In 2003 one feeder lockout was caused by a supervisory cable problem and another was caused by a joint failure. The supervisory cable is being replaced with a fiber optic cable and associated relays are also being replaced.
1J14	South Shore	4.33	280.22	Worst 10% SAIFI for two years	The 1J14 had 5 complete interruptions over the 2002-2003 period, two of which were due to animal contacts in the substation and two due to cable incidents. The fifth was caused by a phase wire down during a winter storm. A review of the relay operations for these events resulted in corrections made to the protection scheme. Load on this feeder is also being converted to a more reliable 13.8kV circuit. Presently a study is underway to address the complete supply and distribution needs in this area. The conclusions of the study are expected to include recommendations for modification and improvements to the substation which will greatly reduce the exposure to animal contacts.
1J7	South Shore	7.48	366.52	Worst 10% SAIFI for two years	The 1J7 had 5 complete interruptions over the 2002-2003 period, two of which were due to animal contacts in the substation and two due to cable incidents. The fifth was caused by a distribution mainline capacitor bank catching fire. A review of the relay operations for these events resulted in corrections made to the protection scheme. Load on this feeder is also being converted to a more reliable 13.8kV circuit. Presently a study is underway to address the complete supply and distribution needs in this area. The conclusions of the study are expected to include recommendations for modification and improvements to the substation which will greatly reduce the exposure to animal contacts.
106W43	Southeast	2.01	498.7	Worst 10% SAIFI in 2002 and worse 10% SAIDI in 2003 and exceeded 300% SAIDI in 2003	A number of interruptions on this feeder were caused by failed mechanical joints. A program started in 2003 to inspect all joints and replace any suspect components. The work requires customer outages and influences the pace of the activity. The program will continue through 2004 until all joints have been examined and repaired as needed.
18J5	Southeast	4.85	233.06	Worst 10% SAIFI for two years	The feeder experienced 6 complete interruptions over the 2002-2003 period. Five of the six occurred when the 13.8kV substation supply was lost. Two circuit reclosers will be installed with loop scheme controls so upon the loss of the primary substation supply line the alternate supply will automatically close in and restore power to the station. This work will be completed in 2004.
4L2	Southeast	3.39	191.87	Worst 10% SAIFI for two years	This feeder experienced 5 complete interruptions over the 2002-2003 period. Three of the five occurred when the 23kV substation supply was lost and a fourth was the result of the failure of a power transformer at another interconnected substation. To resolve the supply situation two reconductoring projects were authorized which will increase the capacity of the supply lines serving the stations. This will make the substation load firm for the loss of one supply line. One of these projects is now complete and the second one is in progress and scheduled to be done by June of 2004. The failed power transformer has been replaced and will be in-service by April 2004.
7L4	Southeast	4.49	403.05	Worst 10% SAIFI for two years	This feeder experienced two complete interruptions and four partial feeder interruptions affecting a large amount of customers all due to trees, limbs or branches. The entire mainline will be trimmed in 2004.
1019W1	Western	2.04	322.87	Worst 10% SAIDI for two years & Exceeds 300% SAIDI for two years	Tree incidents accounted for 83% of SAIDI in 2003. Tree trimming on this feeder is 85% complete. 277 dead or dying trees have been removed. The remaining tree trimming will be completed in 2004.
1102W1	Western	1.39	408.62	Worst 10% SAIDI for two years	Tree incidents account for 92% of SAIDI in 2003. Glendale-Interlaken Road will be re-conducted with space cable in 2004.
1103W2	Western	1.77	547.49	Worst 10% SAIDI for two years	Tree incidents accounted for 84% of SAIDI in 2003. Entire feeder will be trimmed in 2004.

Massachusetts Electric Company
2003 Poor Performance Circuits

FEEDER	DISTRICT	SAIFI	SAIDI	Reason	Corrective Actions
516L1	Western	2.72	248.28	Worst 10% SAIFI for two years	Tree incidents account for 63% of SAIFI in 2003. Tree trimming is currently in progress and is expected to be complete by 05/04. In addition, a loop reclosing scheme will be installed with the 408L2 feeder from Fiskdale substation in 2004.
527L1	Western	3.01	138.82	Worst 10% SAIFI for two years	A single construction accident by company personnel accounted for 33% of SAIFI in 2003. Cutout replacement and lightning remediation projects were completed on this feeder in 2003. In addition an autotransfer scheme will be installed at the substation in 2004.
604W3	Western	2.69	252.84	Worst 10% SAIFI in 2002 and worst 10% SAIDI in 2003 & exceeds 300% SAIFI in 2002	Two feeder lockouts occurred on the feeder in 2003, one due to bad cutout the other due to trees. There were only 10 incidents of any size on entire feeder in 2003. No remediation is planned.



National Grid

NEW ENGLAND

***VEGETATION MANAGEMENT
DISTRIBUTION LINE
MAINTENANCE
T & M
PROGRAM MANUAL***

March 27, 2003

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GLOSSARY

Adventitious buds- Dormant buds located in a leader.

Annual growth- A yearly incremental stage of vegetation growing that can be visually determined by the annual nodes.

Arborist/Forester- Here after referred to as “Arborist”. A National Grid USA employee whose role within their respective administrative district is to plan, budget, execute, and audit vegetation management projects; resolve customer issues; work closely with district vendor leadership to achieve performance goals & assist the administrative district with municipality relations/issues. Additionally, to participate in managing storm restoration; implement program policies/programs & provide regular status updates.

Brush- Vegetation less than four inches DBH that may reach the overhead facilities at maturity.

Clearance- The distance between vegetation and the overhead facilities.

Company- This represents the National Grid USA Retail Distribution companies.

Construction type- The configuration and design of the lineal overhead facilities.

DBH- The diameter of vegetation measured at a point four and one half feet above ground level.

Dominant- Exerting ecological or genetic superiority.

Dormant- Not actively growing but protected from the environment.

Flat cutting- The practice of cutting vegetation at ground level under or adjacent to overhead facilities, where the vegetation has the potential to interface with the overhead facilities.

Hazard- Vegetation which appears to: be dead or dying, be structurally weak, have loss of bark, have loss of foliage, and have stress breaks.

Lateral branch- A branch extending from a parent branch or stem.

Line clearance- The practice of removing vegetation from around overhead facilities.

Main leader- A dominant upright stem, usually the main trunk.

Multiple leaders - Many stems of vegetation originating from the same root system.

Node- A point on a stem at which a leaf or leaves are attached.

Overhead facilities- All electrical conductors and equipment that are attached to a utility pole and are used for the conveyance of electricity.

Permission- The act of receiving approval from the appropriate property owner, where the vegetation is located, in order to perform necessary preventative maintenance on the vegetation.

Plant- Relative to distribution vegetation management purposes, the definition is a tree, vine, or shrub.

Preventative maintenance- The pruning, trimming, removal or chemical treatment of vegetation, growing or existing in proximity to overhead facilities, for the purpose of preventing such growth from interfering with the overhead facilities.

Pruning- The removal, in a scientific manner, of dead, dying, diseased, interfering, objectionable, and/or weak vegetation branches.

Scaffold branch- A large limb that is, or will be part of the permanent branch structure of a tree.

Shrub- A low usually multi-stemmed woody plant.

Sucker growth- New growth originating from adventitious buds. Usually induced by removing a branch.

Tree- A woody perennial plant having a single usually elongate main stem.

Trim- See "Pruning"

Trim cycle- A predetermined period of time between preventative maintenance activities.

Trim zone- The area in and around overhead facilities where vegetation is removed.

Vegetation- Plant life such as trees, shrubs, vines, and brush that has a potential to interface with overhead facilities.

Vendor- A Vegetation Management service provider who has a Purchase Order to provide such services to the National Grid USA companies, Districts, and Arborists.

Vine- A plant whose stem requires support and which climbs by tendrils or twining.

NATIONAL GRID USA companies

NEW ENGLAND

***DISTRIBUTION LINE
VEGETATION MANAGEMENT
REQUIREMENTS***

March 27, 2003

PURPOSE

To define a set of Distribution Line Vegetation Management Requirements that is implemented by the Company on a uniform basis. These requirements are to lay out the specifications for routine preventative maintenance and removal of; dead, unsound, and structurally weak branches and leaders. The Company's Distribution Line Vegetation Management Requirements are designed to address reliability and safety through the understanding of the dynamic interaction between vegetation and overhead facilities.

TRIM CYCLE

The recommended trim cycle is a five-year cycle with a three-year interim trim. The trim cycle is implemented on an annual basis, by identifying the feeders that are due to be trimmed and prioritizing them on a reliability performance basis. The interim trim is implemented by identifying which feeders are halfway through the cycle. They are surveyed for growth and hazard situations and then prioritized for interim trimming. Customer Service lines are only trimmed on the trim cycle basis unless the Arborists determines that a special condition exists requiring an interim trim.

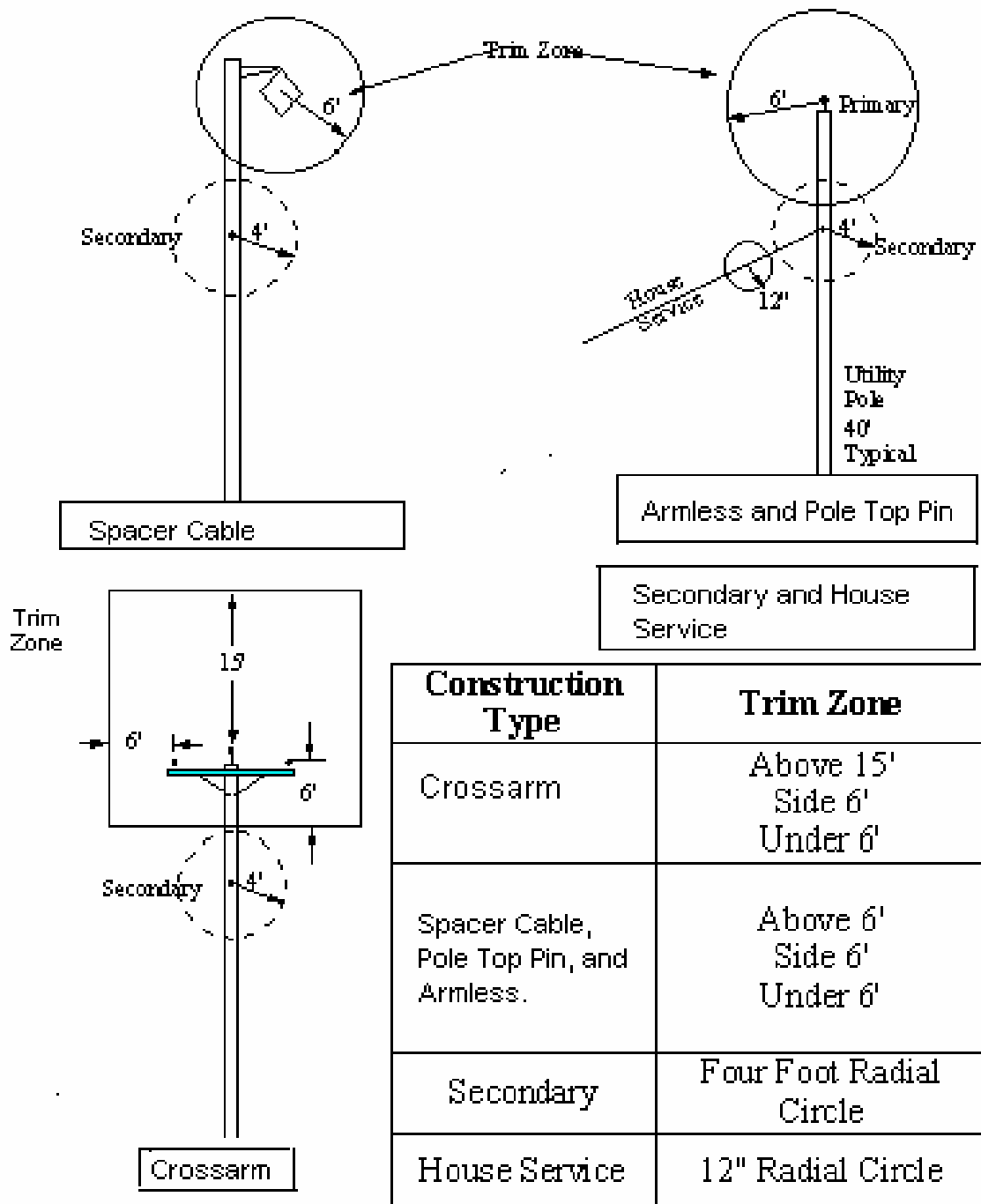
TREE TRIMMING ZONE SPECIFICATION REQUIREMENTS

Table A below illustrates the clearance distance required by the Company for all distribution line clearance maintenance activities based on Overhead facilities construction types. As with all programs there are exceptions to the rules and additional special conditions requirements. These are all clearly spelled out in the following sub-sections. These specifications are designed to prevent vegetation capable of interfering with the overhead facilities, from encroaching upon them, within a four-year period.

TABLE A

CONSTRUCTION TYPE	TRIM ZONE
ALL CROSS ARM CONSTRUCTION	ABOVE 15' SIDE 6' UNDER 6'
ALL SPACER CABLE, POLE TOP PIN, AND ARMLESS CONSTRUCTION	ABOVE 6' SIDE 6' UNDER 6'
TRIPLEX AND RACKED SECONDARY	FOUR FOOT RADIAL CIRCLE
HOUSE SERVICE	12" RADIAL CIRCLE

Vegetation Management Distribution Line Maintenance Minimum Requirements



HAZARD REMOVALS WITHIN TRIM ZONE

Remove all hazardous branches from above or adjacent to the overhead facilities to protect the facilities until the next trim cycle.

SELECTIVE FLAT-CUTTING WITHIN THE TRIM ZONE

Targeted for flat cutting will be tree species that are under the electric conductor(s) and are over 8' in height.

TRIM ZONE EXCEPTIONS

Clearances restricting trim zone requirements

Permissions restrictions-In the event that permission from a property owner to trim or remove in accordance with these specifications cannot be obtained, the following steps will be taken:

LIGHT TRIM- Computer or form entry with inclusion of town, street address and pole number.

REFUSAL TO TRIM- Computer or form entry with inclusion of property owner name, address, telephone number, pole number, description of site, and if possible, signature of property owner.

REFUSAL FOR HAZARD REMOVAL- If permission is denied for the removal of a hazardous limb/tree a computer or form entry with inclusion of the property owners name, address, telephone number, pole number, description of defect or hazard and if possible, property owners' signature. These serious hazards warrant a photo of the tree and follow up by the Arborist.

*Above information will be provided back to the Arborist on a regular basis, as identified.

Structural restrictions- In the event that the main leader and/or scaffolding branches fall within the trim zone are determined not to interfere with the overhead facilities; structurally sound and; free of sucker growth within the trim zone, then the main leader and/or branch may remain in the trim zone.

TYPES, METHODS, AND TECHNIQUES

Acceptable Tree Trimming Types

There are three basic types of trimming that will be discussed in this section. They include; Crown Reduction (Top trimming), Side trimming, and Overhang trimming. There are two additional trimming terms used when discussing trimming types and they are under trimming and V or Through trimming. They will not be listed as separate types because they usually involve one or more of the types already listed. The type of trimming that is selected to be used should be based upon the tree to overhead facility relationship, factoring in the type of tree being trimmed and its growth habits. The ultimate goal is to achieve the necessary clearance to provide a continuous supply of reliable electrical service free of interference from trees while maintaining, as close as possible, the natural characteristics of the tree being trimmed.

Crown Reduction - This type of trimming is also called "Top trimming". It is best when used on slow growing trees. The trimming methods employed to accomplish this affect include drop crotching and/or directional trimming. The trimming type reduces the top of the trees crown when the tree is directly located underneath the overhead facilities and is intended to give the tree a natural look. The trimming should be done with as few cuts as possible and the branches should cut back to a leader, which will minimize the potential for sucker growth.

Side Trimming - Trees growing adjacent to, into, and towards overhead facilities should be side trimmed by removing the entire branch back to the main leader or at least free of the trim zone. Trees with branches that produce sucker growth when cut should definitely be removed. Care should be taken to reduce the effect of unsightly notches by shaping adjacent branches.

Overhang Trimming - This is where the overhead facilities pass under a portion of the crown and the lower branches are removed to provide trim zone overhead clearance. If it is not possible to totally remove overhangs, then every attempt should be made to reduce the weight of the overhang by trimming the branches. All dead, damaged, or weakened overhang branches must be removed.

Acceptable Tree Trimming Methods

There are two basic methods employed in utility line clearance trimming, "Drop Crotching" and "Directional Trimming". These are the two methods that will be accepted by the arborists. On occasion a vendor may be requested to apply an alternative method to fulfill a special set of needs or criteria. Although not considered a trimming method, trees that are approximately 15 feet in height should be trimmed at the nodes. Alex Shigo

calls this "First Order Pruning". The branches that should be retained are those that will produce future growth directionally away from the overhead facilities.

Drop Crotching - This method of trimming calls for removing some of the larger branches at variable distances below the top of the crown. It is intended to retain as much of the natural characteristics of the tree as possible while thinning the crown of the tree. This method of trimming should eliminate future sucker growth, when proper nodal pruning cuts are made, and reduces the amount of trimming work required in subsequent trimming operations.

Directional Trimming - The intent of this method is to direct future growth away from the overhead facilities. It is accomplished by cutting the growth to a lateral branch, which will redirect its future growth away from the overhead facilities.

In Dr. Alex L. Shigo's publication, "Pruning Trees Near Electric Utility Lines" he indicates that 90% of the time 3 branches can be removed to provide 90% of the clearance, which is his 90-3-90 concept. When utilizing these two methods to accomplish a trimming type, this concept should be considered as an employable technique. The use of the two methods will provide the maximum amount of clearance necessary to assure proper clearance from the overhead facilities while minimizing the amount of tree deformation occurring.

Acceptable Pruning Techniques

Pruning techniques and practices are fully explained and diagramed in ANSI A-300, and another excellent reference is Dr. Alex L. Shigo's publication "Pruning Trees Near Electric Utility Lines". Given the fact that these publications provide as excellent guides for this subject area, we feel that there is no need for further explanation.

HAZARD MITIGATION

All vegetation hazards which take one hour or more to remove should not be looked at as a preventative maintenance function but as a hazard mitigation function and should be managed as such. The hazard removal should be identified by the nearest pole location and should be scheduled for removal by a hazard mitigation crew, unless the hazard poses an immediate outage or safety situation. In the event of an immediate outage or safety situation the vendor should immediately notify the Arborist for a determination of removal by the vendor.

NATIONAL GRID USA companies

NEW ENGLAND

**VEGETATION MANAGEMENT
*VENDOR***

REQUIREMENTS

FOR

T & M CREWS

March 27, 2003

PURPOSE

To define the role and expectations of the Company's vendors in relation to vegetation management activities performed by the Vendor's T & M crews for the Company. The role and expectations will include such items as; personnel, equipment, customer relations, government relations, Arborist relations, storm emergency implementation procedures, time management, workload implementation plans, wood waste management, and other related items.

VENDOR REQUIREMENTS

PERSONNEL

The vendor shall determine and provide the appropriate level of supervision required to maintain high quality workmanship and optimum productivity in a cost effective manner and in accordance with the supervisory requirements defined in this Chapter.

The vendor is to provide the appropriately trained and certified labor force required to maintain high quality workmanship and optimum productivity while implementing the vegetation management requirements and vendor requirements.

All services are billable in accordance with the vendor submitted labor and equipment rate sheets. Any services required by the Arborist, which are not on the vendor submitted rate sheets, will require prior approval from the System Arborist and Supply Chain.

TRAINING

The vendor shall provide a minimum of eight hours of annual safety training and eight hours of annual professional development training per tree crew employee. All training shall be documented and all documentation shall be provided to the Company Arborist. The Company will provide straight labor time only for such training, up to these maximums. All daily tailgate work/safety meetings which are less than 1 hour are not to be counted towards this time. Any other training required by the vendor which is 1 hour or greater will not be billable once the 16 hour threshold has been reached. Where the vendor feels it is applicable, the vendor may mutually agree to combine their training with Arborist required informational sessions. In this event, the time required by the Arborist will be fully billable including equipment.

VEGETATION MANAGEMENT SERVICES

Preventative Maintenance- Those services as described in the "Distribution Line Vegetation Management Requirements" section. All Preventative maintenance will be

conducted on reliability prioritized feeder basis.

Hazard Tree Mitigation- Those services as described in the “Distribution Line Vegetation Management Requirements” section entitled Hazard Mitigation. The vendor personnel should continuously look for hazardous conditions, assess level of severity, and identify the hazard location by street and pole number. They should immediately report such hazard conditions to their immediate supervisor for reporting to the Arborist. In the event that they cannot reach their immediate supervisor, they should directly notify the Arborist.

Re-trims - All work which is determined by the Arborist to be inside the “Distribution Line Vegetation Management Requirements” which does not have documentation as to why the “Distribution Line Vegetation Management Requirements” could not be met will be required to be re-trimmed at the vendors expense. Any work that gains a change in permission status after trimming has occurred will be re-trimmed as a component of the Company’s expense.

CUSTOMER RELATIONS

Workers shall be properly attired and act in a professional manner. Contact with customers shall be done in a businesslike manner and all requests shall be clear and precise to avoid customer misunderstanding or apprehension. Should there be a serious misunderstanding with a customer, which the vendor cannot fully address or alleviate; the vendor shall notify the Arborist.

UTILITY RELATIONS

Annual Vegetation Implementation Plan- The Arborist will inform the vendor supervisory personnel of the prioritized feeders to be maintained, the targeted mileage goals, and not to exceed cost per mile data. The vendor supervisory personnel will provide the Arborist with a proposed Annual Vegetation Implementation Plan to accomplish the expected goals in a cost effective and productive approach. The Arborist will either accept the Annual Vegetation Implementation Plan or work with the vendor to modify it into an acceptable document to provide for other District concerns the Arborist may have. Once the Arborist has approved the plan it can be implemented. During the course of the year based on data provided by the Arborist, the plan may have to be adjusted to account for data fluctuations.

Communication- The vendor shall communicate with the Arborist on a routine basis on such matters including but not limited to: work progress; prior notification in changes to crew complement; lost time; etc. The vendor labor force will contact the Company daily and report; work location and daily location changes, observed overhead facility

problems and outages particularly crew caused outages.

Data Management- The vendor is responsible for collecting, on company provided electronic data collectors, the required data information requested. In the event that an electronic data collector is not available, then data collection forms will be provided by the company requesting the relevant data information required. The vendor's personnel are responsible for the accuracy of the data that they are reporting and the safe handling of the electronic data collector. If the vendor's personnel breaks the data collector and it is found by the Company to be due to negligence on the vendor's personnel behalf, then the vendor will be charged for the replacement of the electronic data collector.

ALL DATA INFORMATION COLLECTED ON BEHALF OF A NATIONAL GRID USA COMPANY IS CONFIDENTIAL AND THE SOLE OWNERSHIP OF NATIONAL GRID USA.

STATE RELATIONS

The vendor is responsible for notifying the proper state official for all proposed vegetation management activities on state highways. If a permit is required, the company shall obtain the permit. Under specific situations, the Arborist will obtain the necessary permits. Copies of required permits will be kept on site with the crew.

PERMISSIONS

The Vendor will be responsible for determining and implementing the most cost effective approach, for the company, in obtaining permission.

Private property- The Vendor must obtain permission from all private property owners prior to working on private property, except where noted by the Arborist. The vendor will provide the customer, if not at home, with a Company Vegetation Management Program door knocker brochure and a vendor permission card. The vendor shall make a minimum of three documented and reasonable attempts at gaining permission from private property owners. All subsequent skips should be reported to the Arborist for follow up. The vendors crews will not trim or remove vegetation if contact with private property owners cannot be made or if the private property owner refuses to grant permission.

Municipal property- The vendor shall obtain permission to do tree work on municipal trees from the proper authority before doing the work. The vendor shall notify the proper municipal official (e.g. Tree Warden, etc.) and let them know where the vendor crews will be working. If a municipal official refuses clearances as specified in the "Distribution Vegetation Management Requirements" the vendor should document the restriction and inform the Arborist.

Permissions restrictions- In the event that permission from a property owner to trim and remove trees in accordance with these specifications can not be obtained, the following steps will be taken:

Light trim- Computer or paper form entry with inclusion of town, street address and/ or pole number.

Refusal to trim- Computer or paper form entry with inclusion of property owner name, address, telephone number, pole number, description of condition and possible signature.

Refusal for hazard removal- If permission is denied for removal of a hazardous limb or tree, a computer or form entry with inclusion of the property owner's name, address, telephone number, pole number, description of condition and possible signature. These serious hazard conditions warrant immediate follow up, including a photo of the tree by the vendor supervisor or the Arborist.

All information above will be reported back to the Arborist on a regular basis, or at most, quarterly.

EQUIPMENT

The vendor will provide equipment necessary for the performance of the requested services in accordance with the Distribution Line Vegetation Management Requirements and the Purchase Order. This equipment shall be properly maintained, in good operating and presentable condition. The equipment must meet all applicable DOT, ANSI and OSHA Regulations/Standards.

Each Company Arborist will require a minimum number of truck mounted aerial lifts with the lift to be a minimum of fifty-foot platform height. Truck mounted aerial lifts with a platform height greater than 50' will, when required by the Arborist, be billed according to the labor and equipment rate sheet. Any equipment required by the Arborist, which are not on the vendor submitted rate sheets, will require prior approval from the System Arborist and Supply Chain.

The vendor shall be responsible for supplying, at a minimum, a properly operating pager to all supervisory personnel who respond to requests by the Arborist. This is imperative for both normal business and emergency response.

WORK SITE CLEAN-UP

The vendor is responsible for all work sites to be properly cleaned of vegetation debris, including the legal and environmentally acceptable disposal of leaves, branches, wood, wood chips or slash in accordance with federal, state, and municipal regulations and guidelines.

In the Districts where wood chip disposal/work platform areas are provided, the woodchips must be free and clear of all trash and other undesirable debris that could reduce the resale of the woodchips. Attention to chipper maintenance for the consistent production of high quality woodchips is imperative.

HOURS OF OPERATION

Normal work schedule- 7:30 a.m. - 4:00 p.m. Adjustable based on agreement between the Arborist and Vendor. This is based on a 40-hour workweek and daily includes a 15 minute morning coffee break and a 30 minute lunch break. Also, up to 15 minutes each morning will be available to conduct D.O.T. record keeping and vehicle safety checks.

Travel and Chip Disposal Time- The hours of operation are to include travel to and from the work site, fuel time, and wood chip disposal. Until such time that the Arborist provides a convenient parking and chip disposal area, the vendor is responsible for assuring that travel and disposal time is at a minimum.

Excess Travel- In the event the Arborist needs to reassign crew(s) to a temporary work area, the Arborist may authorize additional travel time.

Additional Time- Time Not Worked due to; weather, equipment breakdown time and, Company scheduled holiday may be rescheduled and/or authorized by the Arborist.

STORM EMERGENCY RESPONSE

Vendor storm standby- During severe inclement weather, crew(s) may be placed on storm standby by the Arborist or their designee. They will be instructed as to which Company staging area to report to until such time needed for actual storm restoration work. Tree Crew standby time should be kept to a minimum by utilizing the crews, whenever possible, to conduct preventative maintenance activities while waiting to be deployed to a weather related event. This would be primarily during daylight hours when crews are being held at the end of the day due to the threat of an incoming storm. The

employee and equipment billable rates will take effect as soon as they are requested by the Company Arborist to be on standby status.

Arborist vendor storm response- During off-hour call out for storm or emergency work, the vendor will be allowed no more than 60 minutes to be at the work location from the time that the Arborist makes contact with the first vendor contact person.

Additional vendor storm response- The vendor will provide additional crews as requested by the System Arborist or their designee to the extent possible. The Lump Sum crews will be allocated to all Divisions and their Districts on a retail company basis and based on need, at the discretion of the New England System Arborist.

Storm Equipped Aerial Lift Trucks

All equipment required for storm response purposes shall be in a safe and reliable operating condition.

The following is required equipment during storm conditions:

Truck mounted aerial lift and lift to be a minimum of forty five foot platform height, and all necessary tools, equipment and clothing for storm restoration work including night lighting. Chippers are not required storm equipment unless requested by the Arborist.

NATIONAL GRID USA companies

NEW ENGLAND

***VEGETATION MANAGEMENT
INCENTIVE PROGRAM
FOR
VENDOR
T & M CREWS***

March 27, 2003

DESCRIPTION AND GUIDELINES VENDOR TREE CREWS

GOAL

To improve reliability, attain customer satisfaction, and accomplish more miles of trimming per year in a safe, efficient, and cost effective manner. Also, to assist the vendors in developing a more stable workforce.

MEASURABLE DRIVERS

Miles Trimmed- A predetermined mileage requirement is set by budget divided by avg. cost per mile. The bonus award is established, based on preset thresholds achieved over the requirement, up to a maximum of a 20% enhancement.

Customer Complaints- This is a complaint that requires remediation equal to or greater than \$ 250.00 in costs and the crew was determined to be negligent by the National Grid companies Arborist. If the crew is required, by the National Grid companies Arborist, to re-trim a span or more due to poor performance by the crew then, this constitutes a complaint.

Crew Caused Outages- Any outage that was directly derived by an action of the vendor companies employee and was not a planned outage.

Avoidable Lost Time Accidents- This is an accident that could have been avoided by following the appropriate vendor company and/or OSHA safety practices and procedures.

QUARTERLY VENDOR CREW BASE AWARDS MEASURES

Quarterly each vendor crew employee directly involved in the National Grid companies District level distribution line maintenance incentive program will have the opportunity to achieve the maximum quarterly award of \$400.00. This award is prorated based on the % over miles trimmed requirement attained and reduced based on the individual criteria.

QUARTERLY AWARD DISTRICT CRITERIA

TRIMMED MILES ACCOMPLISHED- If District miles trimmed productivity exceeds the projected quarterly weighted annual requirement by 20% or more they attain the full \$400.00 quarterly award. Between the projected requirement and the 20% enhanced productivity they can attain \$ 50.00 at 7.5% and an additional \$ 50.00 for each

2.5% improvement up to 15.0% and an additional \$ 75.00 to 17.5% and 125.00 at 20.0% for the full \$400.00.

INDIVIDUAL CRITERIA (All deductions are tallied, totaled and deducted from the award.)

EMPLOYMENT STATUS- The employee must have been employed by the vendor and working in the evaluated National Grid Company District for the full evaluated quarter.

CUSTOMER COMPLAINTS- The first complaint will reduce the award by 30%, the second complaint by 60% and the third complaint by 100%.

CREW CAUSED OUTAGE- 1 outage in a quarter will reduce the award by 50%. Greater than one will disqualify the employee from the award.

AVOIDABLE LOST TIME ACCIDENT- No lost time accidents in a quarter are acceptable. 1 Lost time accident will disqualify the employee from the award.

CREW ANNUAL RECOGNITION AWARD

Annually each vendor crew employee directly involved in the National Grid companies District level distribution line maintenance incentive program will have the opportunity to achieve the maximum annual award. This award is prorated based on the following criteria.

ANNUAL AWARD DISTRICT CRITERIA

TRIMMED MILES ACCOMPLISHED- If National Grid USA trimmed Miles productivity exceeds the projected annual requirement by 20% or more, the vendor employee attains the full \$1,000.00 annual award. Between the projected requirement and the 20% enhanced productivity they can attain \$ 100.00 at 7.5% and an additional pro rated amount for each 2.5% improvement up to the full \$1,000.00.

INDIVIDUAL CRITERIA (All deductions are tallied, totaled and deducted from the award.)

EMPLOYMENT STATUS- The employee must have been employed by the vendor and working in the evaluated National Grid USA Company service area

for a minimum of a full quarter and their award will be prorated based on quarter worked.

CUSTOMER COMPLAINTS- Each individual complaint will reduce the award by 25%. Four or more complaints will disqualify the employee from the annual award.

CREW CAUSED OUTAGE- 1 outage in a year will reduce the award by 50%. Greater than one event will disqualify the employee from the annual award.

AVOIDABLE LOST TIME ACCIDENT- No lost time accidents in a quarter are acceptable. One event will disqualify the employee from the annual award.

All awards paid out will include, all related statutory overhead costs.

NATIONAL GRID USA companies

NEW ENGLAND

ARBORIST REQUIREMENTS

March 27, 2003

PURPOSE

To define the role of the Company Arborist within the Vegetation Management Program.

This description is to include the relationship between the Arborist Requirement, the Vendor Requirements, and Vegetation Management Requirements. The interrelationship is designed to insure high cost effective productivity without jeopardizing work quality and reliability. These requirements identify seven major areas.

PLAN, BUDGET, & ADMINISTRATION

Plan- The Arborist is responsible for developing long and short term plans for their respective management area. This is done by analyzing the vegetation management program data and conducting field survey validations to prioritize preventative maintenance activities and hazard tree removals on a feeder basis. They are also responsible for the workload planning of retail company R.O.W. maintenance activities, within the same management area.

Budget- In concert with the long and short term plans the Arborist is responsible for developing plan related budgets to show what financial resources will be required to carry out the identified plans. Annually, the Arborist will prepare a workload budget and plan of work required to meet the objectives of the long range plan. Once budgets are established and if they differ from the annual budget and workload plan, then it is the Arborists responsibility to reconcile the annual budget and plan to conform with the new budgeted dollars.

Administration- The Arborist is ultimately responsible for overall program administration, which includes; the implementation of the long, short, and annual term plans within the approved budgets, management of all collected data, and attainment of annual goals and objectives. They are also responsible for working with the vendor in the development and approval of the Annual Vegetation Implementation Plan which is how the annual plan and goals are achieved.

AUDIT AND EVALUATION OF INTERNAL AND EXTERNAL PROGRAM PERFORMANCE

Internal- The Arborist is responsible for electronic data and records management and maintenance, fiscal accountability, environmental laws and regulatory adherence, following Company policy, procedures, and regulations and complying with Company fiscal and regulatory internal audit standards.

External- Through the implementation of quality control practices, the Arborist is responsible for assuring that the vendor meets or exceeds Company standards and expectations. This is done by auditing vendor; performance, work practices, safety procedures and guidelines, equipment condition, and impact on reliability. The Arborist will monitor vendor; cost effectiveness, trimmed miles accomplished, data management recording accuracy, customer satisfaction, appearance, and communication skills.

EMERGENCY RESTORATION

The Arborist is responsible for knowing, understanding, and implementing the Company's storm and emergency restoration policies and procedures. They should be prepared to implement these policies and procedures within their respective management area when necessary. All vendor personnel working within the Arborists management area, will be fully informed and aware of what is expected of them during a storm or emergency restoration situation, by the Arborist.

INTERDEPARTMENTAL COORDINATION

Periodically the situation arises where the services of one or more departments, within the Company, may be needed to implement and /or complete a project. It is the Arborists responsibility to know all internal parties within their management areas that may be needed and to coordinate the engagement of their services to implement and/or complete the task that the Arborists program needs implemented and/or completed.

EXTERNAL PUBLIC RELATIONS AND EDUCATION

It is important that the Arborist interacts with the vendor and the customer to assure that the customer understands the necessity, care, and professionalism of the services being provided to them, in order to obtain difficult or limited permission to provide the vegetation management program services. In the event that the vendor cannot get permission or gets limited permission from the property owner, the Arborist will take the documented information from the vendor and attempt to obtain the permission themselves. Regardless of the results, the Arborist should keep the documented event on file for future evidence. Whenever possible the Arborist should attempt to get a photo of the tree(s) in question.

This position will periodically have to make presentations about the importance and quality of service of the program to; neighborhood groups, civic groups,

elected officials, government regulators, vendors, and other interested parties. These presentations can encompass; scientific technical, programmatic, legal, and procedural information.

PROFESSIONAL DEVELOPMENT

The Arborist is responsible for its own continued professional development through: membership in affiliated professional organizations, career development, professional development, data management, electronic processing, office automation, and other associated seminars/courses.

TECHNICAL ADVISOR

Periodically, the Arborist is required to provide professional technical and scientific advise to other Company departments. On occasion the Arborist, may be required by the Company's legal department, to provide professional services as an expert witness.

Nantucket Electric Company

2003 Service Quality Report

March 1, 2004

Submitted to:
Massachusetts Department of
Telecommunications and Energy
Docket No. D.T.E. 04-22

Submitted by:

Nantucket Electric

A **National Grid** Company



FORM B (ELECTRIC COMPANIES)

Nantucket Electric Company

March 1, 2004

<i>PENALTY PROVISIONS</i>	Years in Database	Mean and Benchmark	Performance in 2003	Comments
Telephone Answering Factor (%)	6	Mean: 74.9% Benchmark: 65.9% - 83.9%	97.6%	
Emergency Answering (%)	1	Mean: Not available Benchmark: Does not apply	98.1%	The company started collecting this data in January 2002. No benchmark is calculated for this measure because no revenue penalty or incentive mechanism has been assigned to it, pursuant to the company's service quality plan.
Service Appointments Kept (%)	1	Mean: Not available Benchmark: Not available	100.0%	The company started collecting this data in January 2002. The mean and benchmark will be calculated once three years of data are available.
Meter Reads	6	Mean: 95.6% Benchmark: 92.4% - 99.1%	99.4%	
Consumer Division Cases	10	Mean: 5 Benchmark: 1 - 9	1	
Bill Adjustments (\$/1000 customers)	10	Mean: \$28.73 Benchmark: \$0.00 - \$89.13	\$0.00	
SAIFI	5	Mean: 0.377 Benchmark: 0.030 - 0.724	0.470	
SAIDI	5	Mean: 17.31 Benchmark: 1.40 - 33.22	25.44	
Lost Time Accident Rate (# of acc/200,000 employee hours)	10	Mean: 3.36 Benchmark: 0 - 7.05	11.49	

FORM B (ELECTRIC COMPANIES)

Nantucket Electric Company

March 1, 2004

<i>ADDITIONAL REPORTING</i>	Years in Database	Mean and Benchmark	Performance in 2003	Comments
Staffing Levels	Does not apply	Mean: Does not apply Benchmark: Does not apply		See discussion in Section 3
Restricted Work Day Rate (# of acc/200,000 employee hours worked)	Does not apply	Mean: Does not apply Benchmark: Does not apply	5.74	No mean and benchmark is calculated for this reporting requirement because no revenue penalty or incentive mechanism has been assigned to it, pursuant to the company's service quality plan.
Property Damage > \$50k (#)	Does not apply	Mean: Does not apply Benchmark: Does not apply	0	See discussion in Section 3
Line Loss	Does not apply	Mean: Does not apply Benchmark: Does not apply	9.48	See discussion in Section 3
Capital Expenditures (# of projects and total \$)	Does not apply	Mean: Does not apply Benchmark: Does not apply	\$3.0 million	See discussion in Section 3
Spare Component & Inventory Policy	Does not apply	Mean: Does not apply Benchmark: Does not apply		See discussion in Section 3
Customer Surveys (1-7): Random	4	Mean: 92% Benchmark: Does not apply	96%	Represents the percent of customers who gave a rating of 5, 6, or 7 on a 7-point scale.
Customer Surveys (1-7): Callers	1	Mean: Not available Benchmark: Does not apply	77%	Represents the percent of customers who gave a rating of 6 or 7 on a 7-point scale. Eight types of transactions were included in the survey, and the overall results are weighted based on the number of transactions performed at the call center during the year. Nantucket customers were first included in this survey during 2002.
Customer Service Guarantees (#, total \$): Lack of Notification of Planned Service Interruptions	1	Mean: Not available Benchmark: Does not apply	\$0.00	The company started providing customer service guarantees for failure to notify customers of planned service interruptions in 2002.
Customer Service Guarantees (#, total \$): Failure to Keep Service Appointments	1	Mean: Not available Benchmark: Does not apply	1 @ \$25 = \$25	The company started providing customer service guarantees for failure to keep service appointments in 2002.

Nantucket Electric Service Quality Standards Summary Results

Historical Data by Year	SAIFI	SAIDI	LTA	Calls	DTE Cases	Billing Adjs	Appts Met	Meter Reads
1992			3.99		14	\$0.00	(1)	
1993			5.99		11	\$13.59		
1994			9.98		4	\$0.00		
1995			2.00		12	\$0.00		
1996			3.27		5	\$178.41		
1997	0.157	2.87	0.00	71.6%	4	\$95.25		89.7%
1998	0.082	7.47	0.00	75.1%	3	\$0.00		98.9%
1999	0.961	42.51	8.32	77.8%	3	\$0.00		96.4%
2000	0.303	10.86	0.00	80.7%	1	\$0.00		98.2%
2001	0.381	22.85	0.00	59.0%	2	\$0.00		97.4%
2002	0.639	39.50	0.00	84.9%	3	\$0.00	100.0%	93.2%
2003	0.470	25.44	11.49	97.6%	1	\$0.00	100.0%	99.4%

Original Benchmark (Performance through 2001)								
Average	0.377	17.31	3.36	72.8%	6	\$28.73	n/a	96.1%
Std Deviation	0.347	15.91	3.69	8.4%	5	\$60.40		3.7%
Max Incentive	0.000	0.00	0.00	89.6%	0	\$0.00		100.0%
Deadband Range	0.030	1.40	0.00	81.2%	1	\$0.00		99.8%
	0.724	33.22	7.05	64.4%	11	\$89.13		92.4%
Max Penalty	1.071	49.13	10.74	56.0%	16	\$149.53		88.7%

Actual 2003 Service Quality Standards (Using Performance Thru 2002)									
	Average	0.421	21.01	2.96	74.9%	5	\$28.73	n/a	95.6%
	Std Deviation	0.328	16.87	3.83	9.0%	4	\$60.40		3.5%
	Max Incentive	0.000	0.00	0.00	92.9%	0	\$0.00		100.0%
(2)	Deadband	0.093	4.14	0.00	83.9%	1	\$0.00		99.1%
	Range	0.724	33.22	6.79	65.9%	9	\$89.13		92.4%
(2)	Max Penalty	1.071	49.13	10.62	56.9%	13	\$149.53		88.7%

2003 Service Quality Results								
	SAIFI	SAIDI	LTA	Calls	DTE Cases	Billing Adjs	Appts Met	Meter Reads
% allocation	22.5%	22.5%	10.0%	12.5%	5.0%	5.0%	12.5%	10.0%
Max Penalty or Incentive	\$34,476	\$34,473	\$15,323	\$19,153	\$7,661	\$7,661	\$19,153	\$15,323
Actual (Penalty) Incentive	\$0	\$0	(\$15,323)	\$19,153	\$0	\$0	n/a	\$4,516
						Total net SQ incentive		\$8,346

Actual 2004 Service Quality Standards (Using Performance Thru 2003)									
	Average	0.428	21.64	3.51	78.1%	4	\$27.37	n/a	96.2%
	Std Deviation	0.300	15.49	4.63	11.9%	3	\$60.93		3.5%
	Max Incentive	0.000	0.00	0.00	100.0%	0	\$0.00		100.0%
(2)	Deadband	0.128	6.15	0.00	90.0%	1	\$0.00		99.7%
	Range	0.724	33.22	7.05	66.2%	7	\$88.30		92.7%
(2)	Max Penalty	1.028	49.13	10.74	56.0%	10	\$149.23		89.2%

(1) - "Appointments Met" data collection began in Jan 2002. Three years of data needs to be collected before performance results are monitored against SQ standards.

(2) - In accordance with the approved SQ plan, "the floor benchmarks that trigger penalties do not change".
The 2003/2004 penalty range on this worksheet reflects the application of this rule for the affected measures.

Nantucket Electric Company
Reliability - Outage Frequency (1)

<u>Calendar Year</u>	(a) <u>Customer Hrs</u> <u>Interrupted</u>	(b) <u># Customers</u> <u>Interrupted</u>	(c) <u>Avg # of</u> <u>Customers</u>	<u>Frequency</u> formula: (b) ÷ (c)
1997	465	1,523	9,711	0.157
1998	1,173	775	9,414	0.082
1999	7,296	9,899	10,297	0.961
2000	1,921	3,218	10,613	0.303
2001	4,149	4,147	10,894	0.381
2002	7,330	7,119	11,134	0.639
2003	4,814	5,337	11,352	0.470

		Updated Hist <u>Results</u> <u>1997 to 2003</u>	Original <u>Benchmark</u> <u>1997 to 2001</u>	Performance <u>Measures</u> <u>for 2004</u>
	Average	0.428	0.377	0.428
	STD	0.300	0.347	0.300
Penalty	Max level	1.028	1.071	1.028
	25% level	0.728	0.724	0.724
deadband range	Average	0.428	0.377	0.428
	25% level	0.128	0.030	0.128
Incentive	Max level	0.000	0.000	0.000

Note: Data source - National Grid USA IDS system. Reliability indices exclude 1) All transmission related outages where the Company does not own or operate the equipment, 2) any interruption at the secondary, transformer or service level, and 3) exclusions allowed under the new major event guidelines (any event that causes 15% of customer served in the operating area to be interrupted during the event).

(1) Frequency per Customer Served Interrupted ÷ Average Customers.

Nantucket Electric Company

Reliability - Outage Duration (1)

<u>Calendar Year</u>	(a) Customer Hrs <u>Interrupted</u>	# Customers <u>Interrupted</u>	(b) Avg # of <u>Customers *</u>	<u>Duration (mins)</u> formula: (a) x 60 ÷ (b)
1997	465	1,523	9,711	2.87
1998	1,173	775	9,414	7.47
1999	7,296	9,899	10,297	42.51
2000	1,921	3,218	10,613	10.86
2001	4,149	4,147	10,894	22.85
2002	7,330	7,119	11,134	39.50
2003	4,814	5,337	11,352	25.44

		<u>Updated Hist</u> <u>Data</u> 1997 to 2003	<u>Original</u> <u>Benchmark</u> 1997 to 2001	<u>Performance</u> <u>Measures</u> <u>for 2004</u>
Penalty	Average	21.64	17.31	21.64
	STD	15.49	15.91	15.49
	Max level	52.62	49.13	49.13
deadband range	25% level	37.13	33.22	33.22
	Average	21.64	17.31	21.64
	25% level	6.15	1.40	6.15
Incentive	Max level	0.00	0.00	0.00

Note: Data source - National Grid USA IDS system. Reliability indices exclude 1) All transmission related outages where the Company does not own or operate the equipment, 2) any interruption at the secondary, transformer or service level, and 3) exclusions allowed under the new major event guidelines (any event that causes 15% of customer served in the operating area to be interrupted during the event).

(1) Duration per Customer Served (minutes) = Customer Hours Interrupted x 60 ÷ Average Customers.

Nantucket Electric Company
Lost Work Time Accident Rate

Calendar Year	(a) <u>LTA's</u>	(b) <u># of Nant Employees</u>	(c) <u>Hours Worked</u>	<u>Lost Work Time Accident Rate</u> formula: (a) x 200,000 ÷ (c) <u>LTA rate (1)</u>
1992	2	50	100,200	3.99
1993	3	50	100,200	5.99
1994	5	50	100,200	9.98
1995	1	50	100,200	2.00
1996	1	31	61,122	3.27
1997	0	24	48,096	0.00
1998	0	24	48,096	0.00
1999	2	24	48,096	8.32
2000	0	24	48,096	0.00
2001	0	24	48,096	0.00
2002	0	19	37,281	0.00
2003	2	17	34,813	11.49

		<u>Updated Hist Data</u> 1994 to 2003	<u>Original Benchmark</u> 1992 to 2001	<u>Performance Measures for 2004</u>
Penalty	Average	3.51	3.36	3.51
	STD	4.63	3.69	4.63
	Max level	12.77	10.74	10.74
	25% level	8.14	7.05	7.05
deadband range	Average	3.51	3.36	3.51
	25% level	0.00	0.00	0.00
Incentive	Max level	0.00	0.00	0.00

Note: Lost Time Accident Rate per 200,000 hours worked = Number of Lost Time Accidents x 200,000 ÷ Actual Hours Worked.

Nantucket Electric Company
Customer Telephone Service - Northboro Call Center

<u>Year</u>	<u>Calls Ans</u>	<u><20 sec</u>	<u>%<20 sec (1)</u>
1997	1,765,250	1,263,692	71.6%
1998	1,638,704	1,231,112	75.1%
1999	1,676,906	1,303,929	77.8%
2000	1,936,117	1,562,748	80.7%
2001	2,230,729	1,316,168	59.0%
2002	6,713	5,696	84.9%
2003	7,981	7,786	97.6%

		Updated Hist Data 1997-2003	Original Benchmark 1997-2001	Performance Measures for 2004
Penalty	Average	78.1%	72.8%	78.1%
	STD	11.9%	8.4%	11.9%
	Max level	54.3%	56.0%	56.0%
	25% level	66.2%	64.4%	66.2%
deadband range	Average	78.1%	72.8%	78.1%
	25% level	90.0%	81.2%	90.0%
Incentive	Max level	100.0%	89.6%	100.0%

(1) The Percent of Calls Answered Within 20 Seconds is calculated by dividing the number of calls answered within 20 seconds by the total number of calls answered during the year. "Calls answered" include calls answered by a customer service representative (CSR) and calls completed within the Voice Response Unit (VRU). Abandoned calls are not considered. The time to answer is measured once the customer makes a selection to either speak with a CSR or use the VRU.

1997 was the first full year of operation at the Northboro Customer Service Center

Up until August 2002, National Grid operated two call centers that were used to answer calls from customers of its four distribution companies; one located in Northborough, MA and another in Providence, RI. Prior to 2002, National Grid tracked the telephone service statistics by call center only, not by specific company. The benchmarks for Massachusetts Electric Company and Nantucket Electric Company prior to 2002 were based on data from the Northborough call center, since the majority of both companies' calls from customers were answered at that call center. However, beginning January 1, 2002, National Grid started tracking the telephone statistics by company.

Nantucket Electric Company
Department of Telecommunications and Energy Cases

<u>Year</u>	<u>Cases (1)</u>
1992	14
1993	11
1994	4
1995	12
1996	5
1997	4
1998	3
1999	3
2000	1
2001	2
2002	3
2003	1

		Updated Hist <u>Data</u> 1994-2003	Original <u>Benchmark</u> 1992-2001	Performance Measures <u>for 2004</u>
Incentive	Average	4	6	4
	STD	3	5	3
	Max level	0	0	0
	25% level	1	1	1
deadband range	Average	4	6	4
	25% level	7	11	7
Penalty	Max level	10	16	10

(1) Source of case data: Mass DTE Consumer Division (Electric Company Complaint Rates)

Nantucket Electric Company

DTE Billing Adjustments (Between the Company and a Residential Customer)

<u>Year</u>	<u>Billing Adjustments per DTE (1)</u>	<u>Avg # of Res Customers per Month (2)</u>	<u>Billing Adj per 1,000 Residen Customers (3)</u>
1992	0	6,801	\$0.00
1993	90	6,621	\$13.59
1994	0	6,904	\$0.00
1995	0	7,221	\$0.00
1996	1,407	7,887	\$178.41
1997	825	8,666	\$95.25
1998	0	8,877	\$0.00
1999	0	9,121	\$0.00
2000	0	9,352	\$0.00
2001	0	9,601	\$0.00
2002	0	9,862	\$0.00
2003	0	10,177	\$0.00

		<u>Updated Hist Data 1994 to 2003</u>	<u>Original Benchmark 1992 to 2001</u>	<u>Performance Measures for 2004</u>
Penalty	Average	\$27.37	\$28.73	\$27.37
	STD	\$60.93	\$60.40	\$60.93
	Max level	\$149.23	\$149.53	\$149.23
	25% level	\$88.30	\$89.13	\$88.30
	Average	\$27.37	\$28.73	\$27.37
deadband range	25% level	\$0.00	\$0.00	\$0.00
	Max level	\$0.00	\$0.00	\$0.00
Incentive	Max level	\$0.00	\$0.00	\$0.00

(1) Source: Mass DTE Consumer Division (Consumer Division Adjustments Worksheet)

(2) Source FERC Form 1 page 301 - residential customers

(3) Billing adjustments per 1,000 Customers = Billing Adjustments ÷ Avg # of Customers x 1,000.

Nantucket Electric Company
Customer Service - Service Appointments Met as Scheduled

<u>Year</u>	<u>Appointments Scheduled</u>	<u>Appointments Met</u>	<u>% Met</u>
2002	5	5	100.0%
2003	4	4	100.0%

Note: The Company started collecting data on service appointments in January 2002. The mean and benchmark will be calculated once three years of data are available. Service Appointments refer to a mutually agreed upon arrangement for service between the Company and the customer that specifies the date for the Company's personnel to perform a service activity that requires the presence of the customer at the time of service.

Nantucket Electric Company
On-Cycle Meter Readings

<u>Year</u>	<u>Combined Meters</u>	<u>Estimated</u>	<u>% Read (1)</u>
1997	126,004	13,028	89.7%
1998	128,309	1,370	98.9%
1999	161,780	5,899	96.4%
2000	135,397	2,426	98.2%
2001	138,385	3,610	97.4%
2002	141,113	9,634	93.2%
2003	147,410	834	99.4%

		<u>Updated Hist Data 1997-2003</u>	<u>Original Benchmark 1997-2001</u>	<u>Performance Measures for 2004</u>
Penalty	Average	96.2%	96.1%	96.2%
	STD	3.5%	3.7%	3.5%
	Max level	89.2%	88.7%	89.2%
	25% level	92.7%	92.4%	92.7%
deadband range	Average	96.2%	96.1%	96.2%
	25% level	99.7%	99.8%	99.7%
Incentive	Max level	100.0%	100.0%	100.0%

(1) Percent Read = 1 - (Meters Estimated ÷ Total Meters).

Nantucket Electric acquired by New England Electric in 1996. 1997 was the first full year of meter data collection.

Additional Service Quality Reporting Requirements

Staffing Level Benchmark

Section IV of the Company's service quality plan requires the review of whether staffing levels are in accordance with M.G.L. c. 164, § 1E. This statute provides, in pertinent part, that distribution companies, in complying with service quality standards established by the Department, may not make any labor displacements or reductions below staffing levels in existence on November 1, 1997 unless they are part of a collective bargaining agreement or otherwise approved by the Department. Mass. Gen. Laws c. 164, § 1E(b). Nantucket Electric's staffing levels have been addressed in its collective bargaining agreements, and thus Nantucket Electric has met the requirements of this statute.

Specifically, all but one of the Company's collective bargaining agreements¹ contain the following stipulation:

The Union agrees that for the term of this agreement, all requirements of the Electricity Restructuring Act of 1997, including Section 1E related to staffing levels have been satisfied and that this agreement is a collective bargaining agreement under that language.

The remaining agreement² does not contain this stipulation. It contains more general language about management's right to make decisions about the company. Article III, Managements Rights, provides:

¹The following agreements, all effective 2003 - 2007, contain this language: (1) Local Unions Nos. 326 and 486 of the International Brotherhood of Electrical Workers, (2) Utility Workers Union of America, AFL-CIO, Brotherhood of Utility Workers Council, Locals Nos. 317, 322, 329, and 330 and (3) Utility Workers Union of America, AFL-CIO, Locals No. 362 and 654.

²The Utility Workers Union of America, AFL-CIO, Local No. 654, effective April 1, 2000 — March 31, 2004.

Additional Service Quality Reporting Requirements

The Brotherhood agrees, for itself and its members, not to hinder or interfere with the management of the Company in its several departments on any matter not otherwise specifically addressed in this agreement, including, but not limited to actions related to the following matters: selection of the workforce, including the criteria on which those decisions are based; assignment of the work; direction of the work force; scheduling; *staffing levels*; discipline or discharges for proper cause; and the right to transfer employees to work for which they are better suited and *to furlough employees for any reason, including lack of work or efficiency in operations.* (Emphasis supplied)

In all cases, the appropriateness of Nantucket Electric's staffing levels have been addressed in the collective bargaining agreements, and thus, Nantucket Electric is in compliance with M.G.L. c. 164, §1E. No further review of Nantucket Electric's staffing levels is required.

Property Damage

Pursuant to Section VIII.A of the Company's Service Quality Plan, the Company reports to the Department on property damage to Company-owned property in excess of \$50,000. In 2003, there were no occurrences that produced damage to company property in excess of \$50,000.

Line Losses

Pursuant to Section VIII. A. of the Company's Service Quality Plan, the Company is providing substantiation of (1) its Electric Distribution Line Loss value, (2) the accompanying adjustments that were made to standardize the value to specific reference conditions, and (3) the specific reference conditions in Attachment B.

Additional Service Quality Reporting Requirements

Capital Expenditure Information

Pursuant to Section VIII.E of the Company's Service Quality Plan, the Company is providing:

1. Attachment C: A summary worksheet showing Nantucket Electric approved and completed transmission and distribution capital expenditures by year (1993-2003).
2. Attachment D: A detailed report for 2003³ showing expenditures by project, including a description of each project.

Spare Component and Inventory Policy

Pursuant to Section VIII. F of the Company's Service Quality Plan, the Company provides the following description of its spare component and inventory policy.

The Company's inventory is managed in conjunction with the inventory of the other National Grid distribution companies ("Companies"). There is a centralized distribution center (CDC) in Franklin, Massachusetts and twelve regional warehouses in New England. In New York, there is a CDC, and two hub warehouse locations. These CDCs and warehouses receive, store, and distribute materials and supplies to meet day-to-day requirements for new construction, rebuilds, repairs, and service restoration due to severe weather conditions. The Companies manage \$57 million in inventory and distribute approximately \$120 million in materials throughout the National Grid service territories. At this time, Nantucket Electric and the other New England distribution companies routinely share inventoried materials with each

³ Detailed information on capital expenditures for 1993-2001 has been provided to the Department in Docket D.T.E. 01-71B, on March 1, 2002 and Docket D.T.E. 03-20 on March 3, 2003.

Additional Service Quality Reporting Requirements

other. Sharing with the New York distribution company occurs during emergencies only, however.

As a result of the 2002 merger between National Grid USA and the Niagara Mohawk Power Corporation, National Grid has developed a centralized corporate structure to combine the Supply Chain Management functions that separately existed in New York and New England. This includes procurement, materials planning, computer support systems, a common set of operational practices, and a system wide investment recovery practice. Through the system wide investment recovery practice, National Grid will reduce its inventory by standardizing items, decreasing lead-times associated with aggressive negotiations with vendors, and eventually sharing inventories. These inventory reductions will not affect the ability to provide reliable service to customers, however. Emergency material distribution will be enhanced, system-wide, by combining the best practices from New York and New England. National Grid has established important safeguards to balance the risk of running out of critical items in the course of this methodical inventory reduction. It will monitor the accuracy of the inventory, provide flexible delivery services, and develop cross-functional solutions for material supply consistent with customer service requirements. These actions will result in a cost effective, coordinated inventory management system.

National Grid works to obtain the maximum salvage value for idle assets classified as surplus or obsolete inventories, scrap, and retired capital equipment. These assets and waste management activities will continue to include the security, control, and environmental

Additional Service Quality Reporting Requirements

accountability during the disposal of these idle assets and commodity items. The current New York investment recovery programs will continue, while focusing on the use of the Wire Granulation Service, a wire material recovery process, and implementing a new Transformer Disposal Process will increase the Investment Recovery effort in New England.

Customer Surveys

Pursuant to Section III.C of the Company's Service Quality Plan, the Company is providing:

1. Attachment E, page 1: Results of a customer satisfaction survey of a statistically representative sample of residential customers.
2. Attachment E, page 2: Results of a survey of customers randomly selected from those customers who have contacted the Company's customer service department within 2003.

Annual Major Outage Events

In response to the reporting requirements set forth in Section VIII.D of the Company's Service Quality Plan, the Company reports that it had two Excludable Major Events in 2003 on June 1 and October 4, the details of which are discussed below.

June 1

On June 1, the Nantucket service territory experienced a wind storm that resulted in 44% (5,051) of Nantucket's customers being without service. Three trees came down on power lines during the event. The longest duration experienced by customers during this event was 2 hours

Additional Service Quality Reporting Requirements

and 28 minutes for 1,246 customers. No additional crews were required to restore service during this event.

October 4

On October 4, 17.4% (1,970) of Nantucket's customers were without service for approximately 5 minutes when a station breaker tripped open. A patrol was made, but nothing was found. All customers were restored within 5 minutes. No additional crews were required to restore service during this event.

Poor Performing Circuits

Pursuant to Section VIII.G of the Company's Service Quality Plan, the Company has identified the poor performing circuits set forth in Attachment F.

Tree Trimming

In response to the reporting requirements set forth in Section VIII.D of the Company's Service Quality Plan, the Company's policy on tree trimming is presented in Attachment G.

Substantiation of Electric Distribution Line Loss Value – Calendar Year 2003

Distribution line losses are calculated as the difference between System Delivered MWh and the sum of Company Use and Cycles Sales. This is expressed as a percent of System Delivered MWh and adjusted for the number of billing days versus the number of calendar days. For 2003, the value is 9.48%, as shown on page 2.

System Delivered MWh are measured and collected daily at bulk tie-line and substation metering points. These MWh measure total energy delivered to the Nantucket Electric Company (Nantucket) retail service area. System Delivered MWh include the energy consumption of all retail customers, Company Use and distribution line losses as well as theft and other unaccounted for energy. Daily System Delivered MWh are easily summed to calendar months and the year.

Company Use consists of metered MWh that are tracked but not billed. This includes the energy use of Nantucket facilities. Company Use accounts for less than 0.2% of System Delivered MWh.

Cycle Sales refer to MWh measured at customer metering points and collected over the 21 billing cycles of a month. The billing cycles refer to the days on which customer meters are read. This is determined by the meter reading schedule. It is necessary to read customer meters and issue bills on a cycle basis over the course of an entire month because of the sheer number of retail customers.

The 21 billing cycles roughly coincide with the non-holiday weekdays of a month. For example, MWh collected in Cycle 1 consist of customer meter reads from the first non-holiday weekday of the monthly billing period. This day is always close to or at the first day of the calendar month. Cycle 1 MWh measure what customers in that billing cycle consumed since Cycle 1 of the previous month. This consists mainly of energy usage from the previous month. In general, MWh collected from the earlier billing cycles (1-10) reflect more energy usage from the previous month than the current month. MWh collected from the later billing cycles (11-21) reflect more usage from the current month than the previous month. Total Cycle Sales are the sum of all MWh collected in Cycle 1 through Cycle 21 of the month. Cycle Sales thus measure energy consumption billed over the calendar month but consumed during both the current and previous month.

To mitigate the timing difference between Cycle MWh Sales and System Delivered MWh, the Electric Distribution Line Loss value is adjusted for the number of days that customers are billed for in a year versus the number of calendar days that System Delivered MWh are collected for. For example, in 2003 there were 365 calendar days (non-leap year) for which System Delivered MWh were collected. However, per the meter reading schedule, customers were billed for 365.57 days in 2003, or 0.16% more than the number of calendar days. As a result, Cycle MWh Sales were approximately 0.16% higher than if customers had been billed for only 365 days; and the Electric Distribution Line Loss value was 0.16% lower. Accordingly, 0.16% was added to the Electric Distribution Line Loss value to adjust for the number of days billed in 2003.

The difference between System Delivered MWh and the sum of Cycle Sales and Company Use still includes other timing differences in consumption, such as differences in consumption due to weather and day type. This is reflected by the negative values shown in January, February and September, as well as the larger values in June and August. However, these differences offset each other in large part over the course of a full year.

Nantucket Electric Company
Calculation of 2003 Electric Distribution Line Loss Value

<u>Month</u>	<u>System Delivered Energy (Calendar MWh) (a)</u>	<u>Cycle Sales Plus Company Use (Billed MWh) (b)</u>	<u>Percent Losses & Unbilled (c)=[(a)-(b)]÷(a)</u>	<u>Number of Calendar Days (d)</u>	<u>Number of Billed Days (e)</u>	<u>Percent Difference (f)=[(d)-(e)]÷(d)</u>	<u>Adjusted Percent Losses & Unbilled (g)=(c)-(f)</u>
Jan-03	13,842	12,528	9.49%	31	33.38	-7.68%	17.17%
Feb-03	12,025	12,148	-1.02%	28	29.67	-5.96%	4.94%
Mar-03	11,336	11,322	0.13%	31	29.14	6.00%	-5.87%
Apr-03	11,005	9,927	9.80%	30	29.48	1.73%	8.07%
May-03	10,770	8,879	17.56%	31	29.48	4.90%	12.66%
Jun-03	11,882	10,037	15.53%	30	30.67	-2.23%	17.76%
Jul-03	15,892	11,522	27.50%	31	30.52	1.55%	25.95%
Aug-03	17,481	14,499	17.06%	31	29.71	4.16%	12.90%
Sep-03	11,687	13,914	-19.06%	30	30.52	-1.73%	-17.32%
Oct-03	10,787	10,573	1.98%	31	29.62	4.45%	-2.47%
Nov-03	10,610	9,322	12.14%	30	30.14	-0.47%	12.61%
Dec-03	12,922	11,562	10.53%	31	33.24	-7.23%	17.75%
2003	150,239	136,231	9.32%	365	365.57	-0.16%	9.48%

Nantucket Electric Company
Summary of Capital Expenditures
Years 1993 - 2003

<u>Year</u>	
1993	
1994	
1995	
1996	\$18,272,629
1997	\$11,544,191
1998	\$1,799,639
1999	\$1,953,661
2000	\$1,083,181
2001	\$1,596,007
2002	\$3,661,980
2003	\$2,994,934

Note: Nantucket Electric Company did not have capital expenditures data by project prior to 1996.
In years 1996 and 1997, expeditures include the Nantucket Cable Project.

1. Install a second 46kV supply to the Island of Nantucket, Nantucket (SS), 2006, \$32M

Construct a new 115/46 kV substation in Barnstable and install one 115/46kV transformer, 46 kV circuit breaker, control house, bus structure and associated equipment.

Install new 46 kV breaker and adapt 13.2 kV bus at existing Candle St. Substation on Nantucket. Permanently connect existing, spare 46/13.2 kV transformer.

Install approximately a 33 mile long, 46 kV, underground and submarine cable system between the substations.

Install a fiber optic cable within the power cable between the two locations.

Total 2003 expenditure: \$2.1M

Nantucket Electric Company
Customer Surveys - Random

<u>Year</u>	<u>Survey Results</u>
1999	87%
2000	96%
2001	95%
2002	90%
2003	96%

Updated Hist Data <u>1999-2003</u>	Original Benchmark <u>1999-2001</u>
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Average	93%	93%
STD	4%	5%

Represents the percent of customers who gave a rating of 5, 6, or 7 on a 7-point scale.

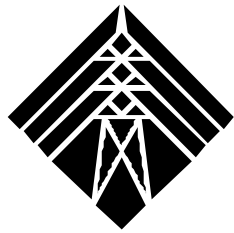
Nantucket Electric Company
Customer Surveys - Callers

<u>Year</u>	<u>Survey Results</u>
2002	76%
2003	77%

Represents the percent of customers who gave a rating of 6 or 7 on a 7-point scale.
Eight types of transactions were included in the survey, and the overall results are weighed
based on the number of transactions performed at the call center during the year.
Nantucket customers were first included in this survey during 2002.

Nantucket Electric Company
2003 Poor Performance Circuits

FEEDER	DISTRICT	SAIFI	SAIDI	Reason	Corrective Actions
101L6	Nantucket	2.13	47.99	Worst 10% SAIFI for two years	A major tree outage was responsible for 81% of the 2003 reliability minutes lost . The area has since been visited by tree crews and is expected to be re-trimmed this Spring '04. Additionally, a faulty lightning arrestor contributed 4% to the reliability minutes lost Finally, underground cable faults contributed appx 5% of the years reliability minutes lost and the Wannacommet Rd URD cable is scheduled to be replaced in it's entirety by end of year .



National Grid

NEW ENGLAND

***VEGETATION MANAGEMENT
DISTRIBUTION LINE
MAINTENANCE
T & M
PROGRAM MANUAL***

March 27, 2003

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GLOSSARY

Adventitious buds- Dormant buds located in a leader.

Annual growth- A yearly incremental stage of vegetation growing that can be visually determined by the annual nodes.

Arborist/Forester- Here after referred to as “Arborist”. A National Grid USA employee whose role within their respective administrative district is to plan, budget, execute, and audit vegetation management projects; resolve customer issues; work closely with district vendor leadership to achieve performance goals & assist the administrative district with municipality relations/issues. Additionally, to participate in managing storm restoration; implement program policies/programs & provide regular status updates.

Brush- Vegetation less than four inches DBH that may reach the overhead facilities at maturity.

Clearance- The distance between vegetation and the overhead facilities.

Company- This represents the National Grid USA Retail Distribution companies.

Construction type- The configuration and design of the lineal overhead facilities.

DBH- The diameter of vegetation measured at a point four and one half feet above ground level.

Dominant- Exerting ecological or genetic superiority.

Dormant- Not actively growing but protected from the environment.

Flat cutting- The practice of cutting vegetation at ground level under or adjacent to overhead facilities, where the vegetation has the potential to interface with the overhead facilities.

Hazard- Vegetation which appears to: be dead or dying, be structurally weak, have loss of bark, have loss of foliage, and have stress breaks.

Lateral branch- A branch extending from a parent branch or stem.

Line clearance- The practice of removing vegetation from around overhead facilities.

Main leader- A dominant upright stem, usually the main trunk.

Multiple leaders - Many stems of vegetation originating from the same root system.

Node- A point on a stem at which a leaf or leaves are attached.

Overhead facilities- All electrical conductors and equipment that are attached to a utility pole and are used for the conveyance of electricity.

Permission- The act of receiving approval from the appropriate property owner, where the vegetation is located, in order to perform necessary preventative maintenance on the vegetation.

Plant- Relative to distribution vegetation management purposes, the definition is a tree, vine, or shrub.

Preventative maintenance- The pruning, trimming, removal or chemical treatment of vegetation, growing or existing in proximity to overhead facilities, for the purpose of preventing such growth from interfering with the overhead facilities.

Pruning- The removal, in a scientific manner, of dead, dying, diseased, interfering, objectionable, and/or weak vegetation branches.

Scaffold branch- A large limb that is, or will be part of the permanent branch structure of a tree.

Shrub- A low usually multi-stemmed woody plant.

Sucker growth- New growth originating from adventitious buds. Usually induced by removing a branch.

Tree- A woody perennial plant having a single usually elongate main stem.

Trim- See "Pruning"

Trim cycle- A predetermined period of time between preventative maintenance activities.

Trim zone- The area in and around overhead facilities where vegetation is removed.

Vegetation- Plant life such as trees, shrubs, vines, and brush that has a potential to interface with overhead facilities.

Vendor- A Vegetation Management service provider who has a Purchase Order to provide such services to the National Grid USA companies, Districts, and Arborists.

Vine- A plant whose stem requires support and which climbs by tendrils or twining.

NATIONAL GRID USA companies

NEW ENGLAND

***DISTRIBUTION LINE
VEGETATION MANAGEMENT
REQUIREMENTS***

March 27, 2003

PURPOSE

To define a set of Distribution Line Vegetation Management Requirements that is implemented by the Company on a uniform basis. These requirements are to lay out the specifications for routine preventative maintenance and removal of; dead, unsound, and structurally weak branches and leaders. The Company's Distribution Line Vegetation Management Requirements are designed to address reliability and safety through the understanding of the dynamic interaction between vegetation and overhead facilities.

TRIM CYCLE

The recommended trim cycle is a five-year cycle with a three-year interim trim. The trim cycle is implemented on an annual basis, by identifying the feeders that are due to be trimmed and prioritizing them on a reliability performance basis. The interim trim is implemented by identifying which feeders are halfway through the cycle. They are surveyed for growth and hazard situations and then prioritized for interim trimming. Customer Service lines are only trimmed on the trim cycle basis unless the Arborists determines that a special condition exists requiring an interim trim.

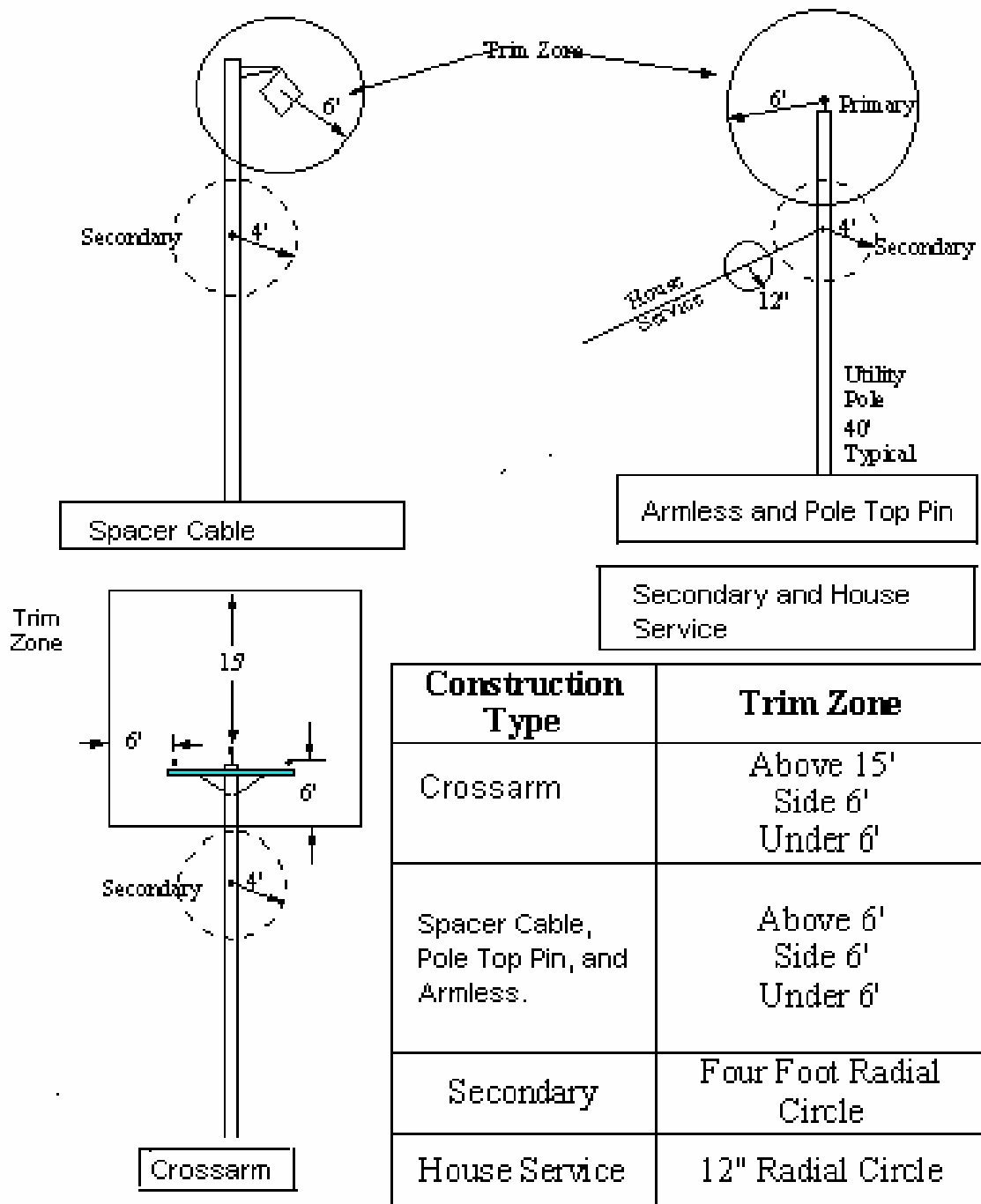
TREE TRIMMING ZONE SPECIFICATION REQUIREMENTS

Table A below illustrates the clearance distance required by the Company for all distribution line clearance maintenance activities based on Overhead facilities construction types. As with all programs there are exceptions to the rules and additional special conditions requirements. These are all clearly spelled out in the following sub-sections. These specifications are designed to prevent vegetation capable of interfering with the overhead facilities, from encroaching upon them, within a four-year period.

TABLE A

CONSTRUCTION TYPE	TRIM ZONE
ALL CROSS ARM CONSTRUCTION	ABOVE 15'
	SIDE 6'
	UNDER 6'
ALL SPACER CABLE, POLE TOP PIN, AND ARMLESS CONSTRUCTION	ABOVE 6'
	SIDE 6'
	UNDER 6'
TRIPLEX AND RACKED SECONDARY	FOUR FOOT RADIAL CIRCLE
HOUSE SERVICE	12" RADIAL CIRCLE

Vegetation Management Distribution Line Maintenance Minimum Requirements



HAZARD REMOVALS WITHIN TRIM ZONE

Remove all hazardous branches from above or adjacent to the overhead facilities to protect the facilities until the next trim cycle.

SELECTIVE FLAT-CUTTING WITHIN THE TRIM ZONE

Targeted for flat cutting will be tree species that are under the electric conductor(s) and are over 8' in height.

TRIM ZONE EXCEPTIONS

Clearances restricting trim zone requirements

Permissions restrictions-In the event that permission from a property owner to trim or remove in accordance with these specifications cannot be obtained, the following steps will be taken:

LIGHT TRIM- Computer or form entry with inclusion of town, street address and pole number.

REFUSAL TO TRIM- Computer or form entry with inclusion of property owner name, address, telephone number, pole number, description of site, and if possible, signature of property owner.

REFUSAL FOR HAZARD REMOVAL- If permission is denied for the removal of a hazardous limb/tree a computer or form entry with inclusion of the property owners name, address, telephone number, pole number, description of defect or hazard and if possible, property owners' signature. These serious hazards warrant a photo of the tree and follow up by the Arborist.

*Above information will be provided back to the Arborist on a regular basis, as identified.

Structural restrictions- In the event that the main leader and/or scaffolding branches fall within the trim zone are determined not to interfere with the overhead facilities; structurally sound and; free of sucker growth within the trim zone, then the main leader and/or branch may remain in the trim zone.

TYPES, METHODS, AND TECHNIQUES

Acceptable Tree Trimming Types

There are three basic types of trimming that will be discussed in this section. They include; Crown Reduction (Top trimming), Side trimming, and Overhang trimming. There are two additional trimming terms used when discussing trimming types and they are under trimming and V or Through trimming. They will not be listed as separate types because they usually involve one or more of the types already listed. The type of trimming that is selected to be used should be based upon the tree to overhead facility relationship, factoring in the type of tree being trimmed and its growth habits. The ultimate goal is to achieve the necessary clearance to provide a continuous supply of reliable electrical service free of interference from trees while maintaining, as close as possible, the natural characteristics of the tree being trimmed.

Crown Reduction - This type of trimming is also called "Top trimming". It is best when used on slow growing trees. The trimming methods employed to accomplish this affect include drop crotching and/or directional trimming. The trimming type reduces the top of the trees crown when the tree is directly located underneath the overhead facilities and is intended to give the tree a natural look. The trimming should be done with as few cuts as possible and the branches should cut back to a leader, which will minimize the potential for sucker growth.

Side Trimming - Trees growing adjacent to, into, and towards overhead facilities should be side trimmed by removing the entire branch back to the main leader or at least free of the trim zone. Trees with branches that produce sucker growth when cut should definitely be removed. Care should be taken to reduce the effect of unsightly notches by shaping adjacent branches.

Overhang Trimming - This is where the overhead facilities pass under a portion of the crown and the lower branches are removed to provide trim zone overhead clearance. If it is not possible to totally remove overhangs, then every attempt should be made to reduce the weight of the overhang by trimming the branches. All dead, damaged, or weakened overhang branches must be removed.

Acceptable Tree Trimming Methods

There are two basic methods employed in utility line clearance trimming, "Drop Crotching" and "Directional Trimming". These are the two methods that will be accepted by the arborists. On occasion a vendor may be requested to apply an alternative method to fulfill a special set of needs or criteria. Although not considered a trimming method, trees that are approximately 15 feet in height should be trimmed at the nodes. Alex Shigo

calls this "First Order Pruning". The branches that should be retained are those that will produce future growth directionally away from the overhead facilities.

Drop Crotching - This method of trimming calls for removing some of the larger branches at variable distances below the top of the crown. It is intended to retain as much of the natural characteristics of the tree as possible while thinning the crown of the tree. This method of trimming should eliminate future sucker growth, when proper nodal pruning cuts are made, and reduces the amount of trimming work required in subsequent trimming operations.

Directional Trimming - The intent of this method is to direct future growth away from the overhead facilities. It is accomplished by cutting the growth to a lateral branch, which will redirect its future growth away from the overhead facilities.

In Dr. Alex L. Shigo's publication, "Pruning Trees Near Electric Utility Lines" he indicates that 90% of the time 3 branches can be removed to provide 90% of the clearance, which is his 90-3-90 concept. When utilizing these two methods to accomplish a trimming type, this concept should be considered as an employable technique. The use of the two methods will provide the maximum amount of clearance necessary to assure proper clearance from the overhead facilities while minimizing the amount of tree deformation occurring.

Acceptable Pruning Techniques

Pruning techniques and practices are fully explained and diagramed in ANSI A-300, and another excellent reference is Dr. Alex L. Shigo's publication "Pruning Trees Near Electric Utility Lines". Given the fact that these publications provide as excellent guides for this subject area, we feel that there is no need for further explanation.

HAZARD MITIGATION

All vegetation hazards which take one hour or more to remove should not be looked at as a preventative maintenance function but as a hazard mitigation function and should be managed as such. The hazard removal should be identified by the nearest pole location and should be scheduled for removal by a hazard mitigation crew, unless the hazard poses an immediate outage or safety situation. In the event of an immediate outage or safety situation the vendor should immediately notify the Arborist for a determination of removal by the vendor.

NATIONAL GRID USA companies

NEW ENGLAND

**VEGETATION MANAGEMENT
*VENDOR***

REQUIREMENTS

FOR

T & M CREWS

March 27, 2003

PURPOSE

To define the role and expectations of the Company's vendors in relation to vegetation management activities performed by the Vendor's T & M crews for the Company. The role and expectations will include such items as; personnel, equipment, customer relations, government relations, Arborist relations, storm emergency implementation procedures, time management, workload implementation plans, wood waste management, and other related items.

VENDOR REQUIREMENTS

PERSONNEL

The vendor shall determine and provide the appropriate level of supervision required to maintain high quality workmanship and optimum productivity in a cost effective manner and in accordance with the supervisory requirements defined in this Chapter.

The vendor is to provide the appropriately trained and certified labor force required to maintain high quality workmanship and optimum productivity while implementing the vegetation management requirements and vendor requirements.

All services are billable in accordance with the vendor submitted labor and equipment rate sheets. Any services required by the Arborist, which are not on the vendor submitted rate sheets, will require prior approval from the System Arborist and Supply Chain.

TRAINING

The vendor shall provide a minimum of eight hours of annual safety training and eight hours of annual professional development training per tree crew employee. All training shall be documented and all documentation shall be provided to the Company Arborist. The Company will provide straight labor time only for such training, up to these maximums. All daily tailgate work/safety meetings which are less than 1 hour are not to be counted towards this time. Any other training required by the vendor which is 1 hour or greater will not be billable once the 16 hour threshold has been reached. Where the vendor feels it is applicable, the vendor may mutually agree to combine their training with Arborist required informational sessions. In this event, the time required by the Arborist will be fully billable including equipment.

VEGETATION MANAGEMENT SERVICES

Preventative Maintenance- Those services as described in the "Distribution Line Vegetation Management Requirements" section. All Preventative maintenance will be

conducted on reliability prioritized feeder basis.

Hazard Tree Mitigation- Those services as described in the “Distribution Line Vegetation Management Requirements” section entitled Hazard Mitigation. The vendor personnel should continuously look for hazardous conditions, assess level of severity, and identify the hazard location by street and pole number. They should immediately report such hazard conditions to their immediate supervisor for reporting to the Arborist. In the event that they cannot reach their immediate supervisor, they should directly notify the Arborist.

Re-trims - All work which is determined by the Arborist to be inside the “Distribution Line Vegetation Management Requirements” which does not have documentation as to why the “Distribution Line Vegetation Management Requirements” could not be met will be required to be re-trimmed at the vendors expense. Any work that gains a change in permission status after trimming has occurred will be re-trimmed as a component of the Company’s expense.

CUSTOMER RELATIONS

Workers shall be properly attired and act in a professional manner. Contact with customers shall be done in a businesslike manner and all requests shall be clear and precise to avoid customer misunderstanding or apprehension. Should there be a serious misunderstanding with a customer, which the vendor cannot fully address or alleviate; the vendor shall notify the Arborist.

UTILITY RELATIONS

Annual Vegetation Implementation Plan- The Arborist will inform the vendor supervisory personnel of the prioritized feeders to be maintained, the targeted mileage goals, and not to exceed cost per mile data. The vendor supervisory personnel will provide the Arborist with a proposed Annual Vegetation Implementation Plan to accomplish the expected goals in a cost effective and productive approach. The Arborist will either accept the Annual Vegetation Implementation Plan or work with the vendor to modify it into an acceptable document to provide for other District concerns the Arborist may have. Once the Arborist has approved the plan it can be implemented. During the course of the year based on data provided by the Arborist, the plan may have to be adjusted to account for data fluctuations.

Communication- The vendor shall communicate with the Arborist on a routine basis on such matters including but not limited to: work progress; prior notification in changes to crew complement; lost time; etc. The vendor labor force will contact the Company daily and report; work location and daily location changes, observed overhead facility

problems and outages particularly crew caused outages.

Data Management- The vendor is responsible for collecting, on company provided electronic data collectors, the required data information requested. In the event that an electronic data collector is not available, then data collection forms will be provided by the company requesting the relevant data information required. The vendor's personnel are responsible for the accuracy of the data that they are reporting and the safe handling of the electronic data collector. If the vendor's personnel breaks the data collector and it is found by the Company to be due to negligence on the vendor's personnel behalf, then the vendor will be charged for the replacement of the electronic data collector.

ALL DATA INFORMATION COLLECTED ON BEHALF OF A NATIONAL GRID USA COMPANY IS CONFIDENTIAL AND THE SOLE OWNERSHIP OF NATIONAL GRID USA.

STATE RELATIONS

The vendor is responsible for notifying the proper state official for all proposed vegetation management activities on state highways. If a permit is required, the company shall obtain the permit. Under specific situations, the Arborist will obtain the necessary permits. Copies of required permits will be kept on site with the crew.

PERMISSIONS

The Vendor will be responsible for determining and implementing the most cost effective approach, for the company, in obtaining permission.

Private property- The Vendor must obtain permission from all private property owners prior to working on private property, except where noted by the Arborist. The vendor will provide the customer, if not at home, with a Company Vegetation Management Program door knocker brochure and a vendor permission card. The vendor shall make a minimum of three documented and reasonable attempts at gaining permission from private property owners. All subsequent skips should be reported to the Arborist for follow up. The vendors crews will not trim or remove vegetation if contact with private property owners cannot be made or if the private property owner refuses to grant permission.

Municipal property- The vendor shall obtain permission to do tree work on municipal trees from the proper authority before doing the work. The vendor shall notify the proper municipal official (e.g. Tree Warden, etc.) and let them know where the vendor crews will be working. If a municipal official refuses clearances as specified in the "Distribution Vegetation Management Requirements" the vendor should document the restriction and inform the Arborist.

Permissions restrictions- In the event that permission from a property owner to trim and remove trees in accordance with these specifications can not be obtained, the following steps will be taken:

Light trim- Computer or paper form entry with inclusion of town, street address and/ or pole number.

Refusal to trim- Computer or paper form entry with inclusion of property owner name, address, telephone number, pole number, description of condition and possible signature.

Refusal for hazard removal- If permission is denied for removal of a hazardous limb or tree, a computer or form entry with inclusion of the property owner's name, address, telephone number, pole number, description of condition and possible signature. These serious hazard conditions warrant immediate follow up, including a photo of the tree by the vendor supervisor or the Arborist.

All information above will be reported back to the Arborist on a regular basis, or at most, quarterly.

EQUIPMENT

The vendor will provide equipment necessary for the performance of the requested services in accordance with the Distribution Line Vegetation Management Requirements and the Purchase Order. This equipment shall be properly maintained, in good operating and presentable condition. The equipment must meet all applicable DOT, ANSI and OSHA Regulations/Standards.

Each Company Arborist will require a minimum number of truck mounted aerial lifts with the lift to be a minimum of fifty-foot platform height. Truck mounted aerial lifts with a platform height greater than 50' will, when required by the Arborist, be billed according to the labor and equipment rate sheet. Any equipment required by the Arborist, which are not on the vendor submitted rate sheets, will require prior approval from the System Arborist and Supply Chain.

The vendor shall be responsible for supplying, at a minimum, a properly operating pager to all supervisory personnel who respond to requests by the Arborist. This is imperative for both normal business and emergency response.

WORK SITE CLEAN-UP

The vendor is responsible for all work sites to be properly cleaned of vegetation debris, including the legal and environmentally acceptable disposal of leaves, branches, wood,

wood chips or slash in accordance with federal, state, and municipal regulations and guidelines.

In the Districts where wood chip disposal/work platform areas are provided, the woodchips must be free and clear of all trash and other undesirable debris that could reduce the resale of the woodchips. Attention to chipper maintenance for the consistent production of high quality woodchips is imperative.

HOURS OF OPERATION

Normal work schedule- 7:30 a.m. - 4:00 p.m. Adjustable based on agreement between the Arborist and Vendor. This is based on a 40-hour workweek and daily includes a 15 minute morning coffee break and a 30 minute lunch break. Also, up to 15 minutes each morning will be available to conduct D.O.T. record keeping and vehicle safety checks.

Travel and Chip Disposal Time- The hours of operation are to include travel to and from the work site, fuel time, and wood chip disposal. Until such time that the Arborist provides a convenient parking and chip disposal area, the vendor is responsible for assuring that travel and disposal time is at a minimum.

Excess Travel- In the event the Arborist needs to reassign crew(s) to a temporary work area, the Arborist may authorize additional travel time.

Additional Time- Time Not Worked due to; weather, equipment breakdown time and, Company scheduled holiday may be rescheduled and/or authorized by the Arborist.

STORM EMERGENCY RESPONSE

Vendor storm standby- During severe inclement weather, crew(s) may be placed on storm standby by the Arborist or their designee. They will be instructed as to which Company staging area to report to until such time needed for actual storm restoration work. Tree Crew standby time should be kept to a minimum by utilizing the crews, whenever possible, to conduct preventative maintenance activities while waiting to be deployed to a weather related event. This would be primarily during daylight hours when crews are being held at the end of the day due to the threat of an incoming storm. The employee and equipment billable rates will take effect as soon as they are requested by the Company Arborist to be on standby status.

Arborist vendor storm response- During off-hour call out for storm or emergency work, the vendor will be allowed no more than 60 minutes to be at the work location from the time that the Arborist makes contact with the first vendor contact person.

Additional vendor storm response- The vendor will provide additional crews as

requested by the System Arborist or their designee to the extent possible. The Lump Sum crews will be allocated to all Divisions and their Districts on a retail company basis and based on need, at the discretion of the New England System Arborist.

Storm Equipped Aerial Lift Trucks

All equipment required for storm response purposes shall be in a safe and reliable operating condition.

The following is required equipment during storm conditions:

Truck mounted aerial lift and lift to be a minimum of forty five foot platform height, and all necessary tools, equipment and clothing for storm restoration work including night lighting. Chippers are not required storm equipment unless requested by the Arborist.

NATIONAL GRID USA companies

NEW ENGLAND

***VEGETATION MANAGEMENT
INCENTIVE PROGRAM
FOR
VENDOR
T & M CREWS***

March 27, 2003

DESCRIPTION AND GUIDELINES VENDOR TREE CREWS

GOAL

To improve reliability, attain customer satisfaction, and accomplish more miles of trimming per year in a safe, efficient, and cost effective manner. Also, to assist the vendors in developing a more stable workforce.

MEASURABLE DRIVERS

Miles Trimmed- A predetermined mileage requirement is set by budget divided by avg. cost per mile. The bonus award is established, based on preset thresholds achieved over the requirement, up to a maximum of a 20% enhancement.

Customer Complaints- This is a complaint that requires remediation equal to or greater than \$ 250.00 in costs and the crew was determined to be negligent by the National Grid companies Arborist. If the crew is required, by the National Grid companies Arborist, to re-trim a span or more due to poor performance by the crew then, this constitutes a complaint.

Crew Caused Outages- Any outage that was directly derived by an action of the vendor companies employee and was not a planned outage.

Avoidable Lost Time Accidents- This is an accident that could have been avoided by following the appropriate vendor company and/or OSHA safety practices and procedures.

QUARTERLY VENDOR CREW BASE AWARDS MEASURES

Quarterly each vendor crew employee directly involved in the National Grid companies District level distribution line maintenance incentive program will have the opportunity to achieve the maximum quarterly award of \$400.00. This award is prorated based on the % over miles trimmed requirement attained and reduced based on the individual criteria.

QUARTERLY AWARD DISTRICT CRITERIA

TRIMMED MILES ACCOMPLISHED- If District miles trimmed productivity exceeds the projected quarterly weighted annual requirement by 20% or more they attain the full \$400.00 quarterly award. Between the projected requirement and the 20% enhanced productivity they can attain \$ 50.00 at 7.5% and an additional \$ 50.00 for each 2.5% improvement up to 15.0% and an additional \$ 75.00 to 17.5% and 125.00 at 20.0% for the full \$400.00.

INDIVIDUAL CRITERIA (All deductions are tallied, totaled and deducted from the award.)

EMPLOYMENT STATUS- The employee must have been employed by the vendor and working in the evaluated National Grid Company District for the full evaluated quarter.

CUSTOMER COMPLAINTS- The first complaint will reduce the award by 30%, the second complaint by 60% and the third complaint by 100%.

CREW CAUSED OUTAGE- 1 outage in a quarter will reduce the award by 50%. Greater than one will disqualify the employee from the award.

AVOIDABLE LOST TIME ACCIDENT- No lost time accidents in a quarter are acceptable. 1 Lost time accident will disqualify the employee from the award.

CREW ANNUAL RECOGNITION AWARD

Annually each vendor crew employee directly involved in the National Grid companies District level distribution line maintenance incentive program will have the opportunity to achieve the maximum annual award. This award is prorated based on the following criteria.

ANNUAL AWARD DISTRICT CRITERIA

TRIMMED MILES ACCOMPLISHED- If National Grid USA trimmed Miles productivity exceeds the projected annual requirement by 20% or more, the vendor employee attains the full \$1,000.00 annual award. Between the projected requirement and the 20% enhanced productivity they can attain \$ 100.00 at 7.5% and an additional pro rated amount for each 2.5% improvement up to the full \$1,000.00.

INDIVIDUAL CRITERIA (All deductions are tallied, totaled and deducted from the award.)

EMPLOYMENT STATUS- The employee must have been employed by the vendor and working in the evaluated National Grid USA Company service area for a minimum of a full quarter and their award will be prorated based on quarters worked.

CUSTOMER COMPLAINTS- Each individual complaint will reduce the award by 25%. Four or more complaints will disqualify the employee from the annual award.

CREW CAUSED OUTAGE- 1 outage in a year will reduce the award by 50%. Greater

than one event will disqualify the employee from the annual award.

AVOIDABLE LOST TIME ACCIDENT- No lost time accidents in a quarter are acceptable. One event will disqualify the employee from the annual award.

All awards paid out will include, all related statutory overhead costs.

NATIONAL GRID USA companies

NEW ENGLAND

ARBORIST REQUIREMENTS

March 27, 2003

PURPOSE

To define the role of the Company Arborist within the Vegetation Management Program.

This description is to include the relationship between the Arborist Requirement, the Vendor Requirements, and Vegetation Management Requirements. The interrelationship is designed to insure high cost effective productivity without jeopardizing work quality and reliability. These requirements identify seven major areas.

PLAN, BUDGET, & ADMINISTRATION

Plan- The Arborist is responsible for developing long and short term plans for their respective management area. This is done by analyzing the vegetation management program data and conducting field survey validations to prioritize preventative maintenance activities and hazard tree removals on a feeder basis. They are also responsible for the workload planning of retail company R.O.W. maintenance activities, within the same management area.

Budget- In concert with the long and short term plans the Arborist is responsible for developing plan related budgets to show what financial resources will be required to carry out the identified plans. Annually, the Arborist will prepare a workload budget and plan of work required to meet the objectives of the long range plan. Once budgets are established and if they differ from the annual budget and workload plan, then it is the Arborists responsibility to reconcile the annual budget and plan to conform with the new budgeted dollars.

Administration- The Arborist is ultimately responsible for overall program administration, which includes; the implementation of the long, short, and annual term plans within the approved budgets, management of all collected data, and attainment of annual goals and objectives. They are also responsible for working with the vendor in the development and approval of the Annual Vegetation Implementation Plan which is how the annual plan and goals are achieved.

AUDIT AND EVALUATION OF INTERNAL AND EXTERNAL PROGRAM PERFORMANCE

Internal- The Arborist is responsible for electronic data and records management and maintenance, fiscal accountability, environmental laws and regulatory adherence, following Company policy, procedures, and regulations and complying with Company fiscal and regulatory internal audit standards.

External- Through the implementation of quality control practices, the Arborist is responsible for assuring that the vendor meets or exceeds Company standards and expectations. This is done by auditing vendor; performance, work practices, safety procedures and guidelines, equipment condition, and impact on reliability. The Arborist will monitor vendor; cost effectiveness, trimmed miles accomplished, data management recording accuracy, customer satisfaction, appearance, and communication skills.

EMERGENCY RESTORATION

The Arborist is responsible for knowing, understanding, and implementing the Company's storm and emergency restoration policies and procedures. They should be prepared to implement these policies and procedures within their respective management area when necessary. All vendor personnel working within the Arborists management area, will be fully informed and aware of what is expected of them during a storm or emergency restoration situation, by the Arborist.

INTERDEPARTMENTAL COORDINATION

Periodically the situation arises where the services of one or more departments, within the Company, may be needed to implement and /or complete a project. It is the Arborists responsibility to know all internal parties within their management areas that may be needed and to coordinate the engagement of their services to implement and/or complete the task that the Arborists program needs implemented and/or completed.

EXTERNAL PUBLIC RELATIONS AND EDUCATION

It is important that the Arborist interacts with the vendor and the customer to assure that the customer understands the necessity, care, and professionalism of the services being provided to them, in order to obtain difficult or limited permission to provide the vegetation management program services. In the event that the vendor cannot get permission or gets limited permission from the property owner, the Arborist will take the documented information from the vendor and attempt to obtain the permission themselves. Regardless of the results, the Arborist should keep the documented event on file for future evidence. Whenever possible the Arborist should attempt to get a photo of the tree(s) in question.

This position will periodically have to make presentations about the importance and quality of service of the program to; neighborhood groups, civic groups,

elected officials, government regulators, vendors, and other interested parties. These presentations can encompass; scientific technical, programmatic, legal, and procedural information.

PROFESSIONAL DEVELOPMENT

The Arborist is responsible for its own continued professional development through: membership in affiliated professional organizations, career development, professional development, data management, electronic processing, office automation, and other associated seminars/courses.

TECHNICAL ADVISOR

Periodically, the Arborist is required to provide professional technical and scientific advise to other Company departments. On occasion the Arborist, may be required by the Company's legal department, to provide professional services as an expert witness.